

GMAT Prep Math Problems – Sorted by Difficulty – Answers hidden

#	Problem	Content Area	Topic	PS/DS	Diff (1-4)	Answers
8	<p>If x is a negative integer, which of the following expressions has the LEAST value?</p> <p>A) $x^2 - 0.50$ B) $x^2 - 0.51$ C) $x^3 - 0.502$ D) $x^3 - 0.511$ E) $x^4 - 0.512$</p>	NP	Positive / Negative	P	1	
11	<p>Is $x + y$ negative?</p> <p>(1) x is negative. (2) y is positive.</p>	NP	Positive / Negative	D	1	
19	<p>The number of years of service of the eight employees in a production department are 15, 10, 9, 17, 6, 4, 14, and 16. What is the range in the number of years of service of the eight employees?</p> <p>A) 10 B) 11 C) 12 D) 13 E) 14</p>	WT	Statistics	P	1	

21	<p>240, 120, 60, 30, ...</p> <p>In the sequence above, each term after the first is $\frac{1}{2}$ of the preceding term. What is the least term of the sequence that is greater than 1?</p> <p>A) $\frac{32}{15}$</p> <p>B) $\frac{16}{15}$</p> <p>C) $\frac{15}{8}$</p> <p>D) $\frac{15}{4}$</p> <p>E) $\frac{15}{2}$</p>	EIV	Sequences	P	1	
28	<p>Which of the following is an integer?</p> <p>I. $\frac{12!}{6!}$</p> <p>II. $\frac{12!}{8!}$</p> <p>III. $\frac{12!}{7!5!}$</p> <p>A) I only</p> <p>B) II only</p> <p>C) III only</p> <p>D) I and II only</p> <p>E) I, II, and III</p>	WT	Combinatorics	P	1	

55	<p>Is x between 0 and 1?</p> <p>(1) x is between $-\frac{1}{2}$ and $\frac{3}{2}$</p> <p>(2) $\frac{3}{4}$ is $\frac{1}{4}$ more than x</p>	EIV	Inequalities	D	1												
76	<p>Is $x > 0.05$?</p> <p>(1) $x > \frac{3}{40}$</p> <p>(2) x is greater than 3 percent of 50.</p>	FDP	FDP Connections	D	1												
80	<table border="1"><thead><tr><th>Stock</th><th>Number of Shares</th></tr></thead><tbody><tr><td>V</td><td>68</td></tr><tr><td>W</td><td>112</td></tr><tr><td>X</td><td>56</td></tr><tr><td>Y</td><td>94</td></tr><tr><td>Z</td><td>45</td></tr></tbody></table> <p>The table shows the number of shares of each of the 5 stocks owned by Mr. Sami. If Mr. Sami was to sell 20 shares of Stock X and buy 24 shares of Stock Y, what would be the increase in the range of the numbers of shares of the 5 stocks owned by Mr. Sami?</p> <p>A) 4 B) 6 C) 9 D) 15 E) 20</p>	Stock	Number of Shares	V	68	W	112	X	56	Y	94	Z	45	WT	Statistics	P	1
Stock	Number of Shares																
V	68																
W	112																
X	56																
Y	94																
Z	45																

86	<table><tr><td></td><td>1:00-2:00</td><td>2:00-3:00</td><td>3:00-4:00</td><td>4:00-5:00</td></tr><tr><td>Operator A</td><td>3</td><td>7</td><td>7</td><td>3</td></tr><tr><td>Operator B</td><td>4</td><td>5</td><td>5</td><td>6</td></tr><tr><td>Operator C</td><td>8</td><td>2</td><td>5</td><td>5</td></tr><tr><td>Operator D</td><td>6</td><td>4</td><td>4</td><td>6</td></tr><tr><td>Operator E</td><td>3</td><td>4</td><td>5</td><td>8</td></tr></table> <p>The table shows the number of calls received by each of five operators during each of 4 one-hour periods. For which operator was the standard deviation of the number of calls received during these 4 periods the least?</p> <p>A) Operator A B) Operator B C) Operator C D) Operator D E) Operator E</p>		1:00-2:00	2:00-3:00	3:00-4:00	4:00-5:00	Operator A	3	7	7	3	Operator B	4	5	5	6	Operator C	8	2	5	5	Operator D	6	4	4	6	Operator E	3	4	5	8	WT	Statistics	P	1	
	1:00-2:00	2:00-3:00	3:00-4:00	4:00-5:00																																
Operator A	3	7	7	3																																
Operator B	4	5	5	6																																
Operator C	8	2	5	5																																
Operator D	6	4	4	6																																
Operator E	3	4	5	8																																
87	<p>Points L, M, and, N have xy-coordinates $(2,0)$, $(8,12)$, and $(14,0)$, respectively. Points P, Q, and R have xy-coordinates $(6,0)$, $(8,4)$, and $(10,0)$, respectively. What fraction of the area of triangle LMN is the area of triangle PQR?</p> <p>A) $\frac{1}{9}$ B) $\frac{1}{8}$ C) $\frac{1}{6}$ D) $\frac{1}{5}$ E) $\frac{1}{3}$</p>	GEO	Coordinate Geometry	P	1																															

89	<p>Malik's recipe for 4 servings of a certain dish requires $1\frac{1}{2}$ cups of pasta. According to this recipe, what is the number of cups of pasta that Malik will use the next time he prepares this dish?</p> <p>(1) The next time he prepares this dish, Malik will make half as many servings as he did the last time he prepared the dish.</p> <p>(2) Malik used 6 cups of pasta the last time he prepared this dish.</p>	WT	Ratios	D	1	
96	<p>What is the value of n?</p> <p>(1) n is between 0 and 1.</p> <p>(2) $\frac{7}{16}$ is $\frac{3}{8}$ more than n.</p>	EIV	Basic Equations	D	1	
102	<p>The main ingredient in a certain prescription drug capsule costs \$500 per kilogram. If each capsule contains 600 milligrams of the ingredients, what is the cost of the ingredient in a capsule? (1 kilogram = 10^6 milligrams)</p> <p>A) \$0.30 B) \$0.83 C) \$1.20 D) \$3.00 E) \$3.33</p>	WT	Rate	P	1	

127	<p>Of the following, which is greatest?</p> <p>A) $\left(\frac{1}{5}\right)^2$</p> <p>B) $\left(\frac{1}{3}\right)^2$</p> <p>C) 3^{-2}</p> <p>D) 5^{-2}</p> <p>E) 2^3</p>	NP	Exponents	P	1	
176	<p>In the xy-coordinate plane, the slope of line l is $\frac{3}{4}$.</p> <p>Does line l pass through the point $\left(-\frac{2}{3}, \frac{1}{2}\right)$?</p> <p>(1) Line l passes through the point (4,4).</p> <p>(2) Line l passes through the point (-4,-2).</p>	GEO	Coordinate Geometry	D	1	
177	<p>The product P of two prime numbers is between 9 and 55. If one of the prime numbers is greater than 2 but less than 6 and the other is greater than 13 but less than 25, then $P =$</p> <p>A) 15</p> <p>B) 33</p> <p>C) 34</p> <p>D) 46</p> <p>E) 51</p>	NP	Divisibility	P	1	

180	<p>If the average (arithmetic mean) of the 4 numbers $n + 2$, $2n - 3$, $4n + 1$, and $7n + 4$ is 15, what is the value of n?</p> <p>A) $\frac{11}{14}$</p> <p>B) 4</p> <p>C) $\frac{32}{7}$</p> <p>D) 11</p> <p>E) 13</p>	WT	Averages	P	1	
181	<p>If a, b, c, and d are consecutive even integers and $a < b < c < d$, then $a + b$ is how much less than $c + d$?</p> <p>A) 2</p> <p>B) 4</p> <p>C) 6</p> <p>D) 8</p> <p>E) 10</p>	NP	Consecutive Integers	P	1	
182	<p>If -3 is 6 more than x, what is the value of $\frac{x}{3}$?</p> <p>A) -9</p> <p>B) -6</p> <p>C) -3</p> <p>D) -1</p> <p>E) 1</p>	WT	Algebraic Translations	P	1	
185	<p>If u, v, and w are integers, is $u > 0$?</p> <p>(1) $u = v^2 + 1$</p> <p>(2) $u = w^4 + 1$</p>	NP	Positive / Negative	D	1	

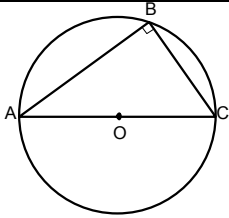
186	$\sqrt{576,800}$ is between A) 300 and 400 B) 400 and 500 C) 500 and 600 D) 600 and 700 E) 700 and 800	NP	Roots	P	1	
187	Jill, who lives in City C , plans to visit 3 different cities, M , L , and S . She plans to visit each city exactly once and return to City C after 3 visits. She can visit the cities in any order. In how many different orders can she visit the 3 cities? A) 3 B) 6 C) 8 D) 9 E) 12	WT	Combinatorics	P	1	
188	A grocery store purchased crates of 40 orange each for \$5.00 per crate and then sold each orange for \$0.20. What was the store's gross profit on each crate of oranges? A) \$3.00 B) \$6.00 C) \$8.00 D) \$10.00 E) \$13.00	WT	Algebraic Translations	P	1	
189	How many of the students in a certain class are taking both a history and a science course? (1) Of all the students in the class, 50 are taking a history course. (2) Of all the students in the class, 70 are taking a science course.	WT	Overlapping Sets	D	1	

190	<p>A store sells milk in cartons of two sizes, one-half gallon and one-quarter gallon. If the store sold a total of 300 cartons of milk yesterday, how many gallons of milk did it sell yesterday?</p> <p>(1) Yesterday the store sold 120 one-quarter-gallon cartons of milk.</p> <p>(2) Yesterday the store sold 90 gallons of milk in one-half-gallon cartons.</p>	WT	Algebraic Translations	D	1	
191	<p>A wooden rod is cut into two pieces. What is the length of the longer piece?</p> <p>(1) One of the pieces is 20 inches longer than the other piece.</p> <p>(2) The length of the shorter piece is $\frac{1}{3}$ the length of the longer piece.</p>	WT	Algebraic Translations	D	1	
192	<p>What is the price for a certain meal listed on a menu?</p> <p>(1) The total paid for the meal, sales tax, and gratuity is \$10.84.</p> <p>(2) The sales tax on food is 6 percent.</p>	FDP	Percent WP	D	1	
195	<p>If a certain sample of data has a mean of 20.0 and a standard deviation of 3.0, which of the following values is more than 2.5 standard deviations of the mean?</p> <p>A) 12.0 B) 13.5 C) 17.0 D) 23.5 E) 26.5</p>	WT	Statistics	P	1	

196	<p>What is the value of y?</p> <p>(1) y is an odd integer between 28 and 34.</p> <p>(2) $31 < y < 36$</p>	NP	Even / Odd	D	1	
197	<p>An insurance company has a contract with a medical laboratory to pay a discounted price for a certain medical test performed on patients referred to the laboratory by the insurance company. If the laboratory's original bill for this medical test on a patient referred by the insurance company is \$230, what is the percent discount specified by the contract between the laboratory and the insurance company?</p> <p>(1) The insurance company is required to pay only 20 percent of the bill for the test.</p> <p>(2) The insurance company is required to pay \$46 for the test.</p>	FDP	Percent WP	D	1	
200	<p>If P, Q, and R are points on the number line, what is the distance between P and R?</p> <p>(1) Q is between P and R.</p> <p>(2) The distance between P and Q is 5.</p>	GEO	Lines and Angles	D	1	
239	<p>Company C has a machine that, working alone at its constant rate, processes 100 units of a certain product in 5 hours. If Company C plans to buy a new machine that will process this product at a constant rate and if the two machines, working together at their respective constant rates, are to process 100 units of this product in 2 hours, what should be the constant rate, in units per hour, of the new machine?</p> <p>A) 50 B) 45 C) 30 D) 25 E) 20</p>	WT	Rate	P	1	

248	<p>What is the hundredths digit of the decimal z?</p> <p>(1) The tenths digit of $100z$ is 2.</p> <p>(2) The units digit of $1,000z$ is 2.</p>	FDP	Digits	D	1	
262	<p>Which of the following must be equal to $(x^6)(x^4)$?</p> <p>A) x^{10} B) x^{12} C) x^{20} D) x^{24} E) x^{48}</p>	NP	Exponents	P	1	
269	<p>Beth's bank charges a service fee on a regular checking account for each month in which the balance on the account falls below \$100 at any time during the month. Did the bank charge a service fee on Beth's regular checking account last month?</p> <p>(1) During last month, a total of \$1,000 was withdrawn from Beth's regular checking account.</p> <p>(2) At the beginning of last month, Beth's regular checking account balance was \$500.</p>	WT	Tricky Wording	D	1	
270	<p>If integer p is greater than 1, is p a prime number?</p> <p>(1) p is odd.</p> <p>(2) The only positive factors of p are 1 and p.</p>	NP	Divisibility	D	1	
271	<p>What is the retail price of a certain calculator?</p> <p>(1) The retail price of the calculator is \$2.00 more than the wholesale price.</p> <p>(2) The retail price of the calculator is 50 percent more than the \$4.00 wholesale price.</p>	FDP	Percent WP	D	1	

272	<p>Is x to the right of -5 on the number line?</p> <p>(1) x is to the right of -7 on the number line.</p> <p>(2) x is between -4 and -3 on the number line.</p>	NP	Positive / Negative	D	1	
273	<p>Is $xy + k = k$ and $x \neq 0$, which of the following must be true?</p> <p>A) $x > y$</p> <p>B) $x + y = 0$</p> <p>C) $y = 0$</p> <p>D) $x - y = 0$</p> <p>E) $xy = 1$</p>	EIV	Basic Equations	P	1	
2	<p>If $xy + z = x(y + z)$, which of the following must be true?</p> <p>A) $x = 0$ and $z = 0$</p> <p>B) $x = 1$ and $y = 1$</p> <p>C) $y = 1$ and $z = 0$</p> <p>D) $x = 1$ or $y = 0$</p> <p>E) $x = 1$ or $z = 0$</p>	EIV	Basic Equations	P	2	

5	 <p>In the figure above, the radius of the circle with center O is 1 and $BC = 1$. What is the area of triangular region ABC?</p> <p>A) $\frac{\sqrt{2}}{2}$</p> <p>B) $\frac{\sqrt{3}}{2}$</p> <p>C) 1</p> <p>D) $\sqrt{2}$</p> <p>E) $\sqrt{3}$</p>	GEO	Triangles	P	2	
6	<p>Is x less than 20?</p> <p>1) The sum of x and y is less than 20.</p> <p>2) y is less than 20.</p>	EIV	Inequalities	D	2	
7	$\frac{2^{(4-1)^2}}{2^{3-2}}$ <p>A) 2^8</p> <p>B) 2^7</p> <p>C) 2^6</p> <p>D) 2^5</p> <p>E) 2^4</p>	NP	Exponents	P	2	

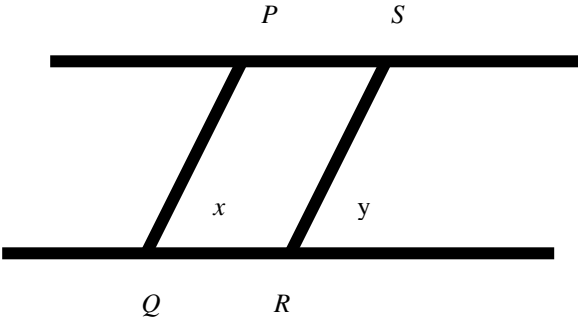
10	<p>According to the directions on a can of frozen orange juice concentrate, 1 can of concentrate is to be mixed with 3 cans of water to make orange juice. How many 12-ounce cans of the concentrate are required to prepare 200 6-ounce servings of orange juice?</p> <p>A) 25 B) 34 C) 50 D) 67 E) 100</p>	WT	Ratios	P	2	
12	<p>In isosceles $\triangle RST$ what is the measure of angle $\angle R$?</p> <p>(1) The measure of $\angle T$ is 100 degrees.</p> <p>(2) The measure of $\angle S$ is 40 degrees.</p>	GEO	Triangles	D	2	
20	<p>If $a = 1$ and $\frac{a-b}{c} = 1$, which of the following is NOT possible value of b?</p> <p>A) -2 B) -1 C) 0 D) 1 E) 2</p>	EIV	Basic Equations	P	2	
22	<p>Linda, Robert, and Pat packed a certain number of boxes with books. What is the ratio of the number of boxes of books that Robert packed to the number of boxes of books that Pat packed?</p> <p>(1) Linda packed 30 percent of the total number of boxes of books.</p> <p>(2) Robert packed 10 more boxes of books than Pat did.</p>	WT	Ratios	D	2	

23	<p>If $k \neq 0, 1$, or -1, is $\frac{1}{k} > 0$?</p> <p>(1) $\frac{1}{k-1} > 0$</p> <p>(2) $\frac{1}{k+1} > 0$</p>	NP	Positive / Negative	D	2	
34	<p>Is $x + y < 1$?</p> <p>(1) $x < \frac{8}{9}$</p> <p>(2) $y < \frac{1}{8}$</p>	EIV	Inequalities	D	2	
35	<p>A certain circular area has its center at point P and has radius 4, and points X and Y lie in the same plane as the circular area. Does point Y lie outside the circular area?</p> <p>(1) The distance between point P and point X is 4.5.</p> <p>(2) The distance between point X and point Y is 9.</p>	GEO	Circles	D	2	
36	<p>$\frac{1001^2 - 999^2}{101^2 - 99^2} =$</p> <p>A) 10 B) 20 C) 40 D) 80 E) 100</p>	EIV	Quadratics	P	2	

46	<p>For which of the following functions is $f_{(a+b)} = f_{(a)} + f_{(b)}$ for all positive numbers a and b?</p> <p>A) $f_{(x)} = x^2$</p> <p>B) $f_{(x)} = x + 1$</p> <p>C) $f_{(x)} = \sqrt{x}$</p> <p>D) $f_{(x)} = \frac{2}{x}$</p> <p>E) $f_{(x)} = -3x$</p>	EIV	Functions	P	2	
49	<p>Susan drove at an average speed of 30 miles per hour for the first 30 miles of a trip and then at an average speed of 60 miles per hour for the remaining 30 miles of the trip. If she made no stops during the trip, what was Susan's average speed, in miles per hour, for the entire trip?</p> <p>A) 35</p> <p>B) 40</p> <p>C) 45</p> <p>D) 50</p> <p>E) 55</p>	WT	Rate	P	2	
53	<p>On a certain day, Tim invested \$1,000 at 10 percent annual interest, compounded annually, and Laura invested \$2,000 at 5 percent annual interest, compounded annually. The total amount of interest earned by Tim's investment in the first 2 years was how much greater than the total amount of interest earned by Lana's investment in the first 2 years?</p> <p>A) \$5</p> <p>B) \$15</p> <p>C) \$50</p> <p>D) \$100</p> <p>E) \$105</p>	FDP	Compound Interest	P	2	

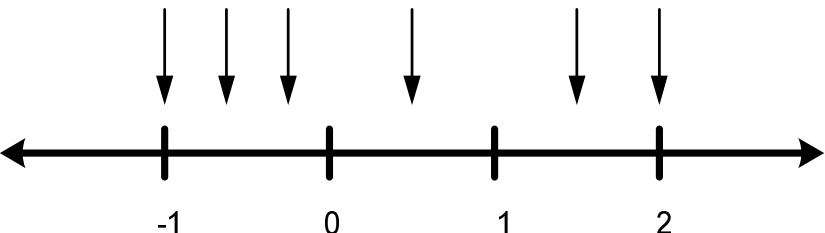
57	<p>Linda put an amount of money into each of two new investments, A and B, that pay simple annual interest. If the annual interest rate of investment B is $1\frac{1}{2}$ times that of investment A, what amount did Linda put into investment A?</p> <p>(1) The interest for 1 year is \$50 from investment A and \$150 for investment B.</p> <p>(2) The amount that Linda put into investment B is twice the amount that she put into investment A.</p>	FDP	Percent WP	D	2	
58	<p>List S and list T each contain 5 positive integers, and for each list the average (arithmetic mean) of the integers in the list is 40. If the integers 30, 40, and 50 are in both lists, is the standard deviation of the integers in list S greater than the standard deviation of the integers in list T?</p> <p>(1) The integer 25 is in list S.</p> <p>(2) The integer 45 is in list T.</p>	WT	Statistics	D	2	
61	<p>If $0 < r < 1 < s < 2$, which of the following must be less than 1?</p> <p>I. $\frac{r}{s}$</p> <p>II. rs</p> <p>III. $s - r$</p> <p>A) I only B) II only C) III only D) I and II E) I and III</p>	FDP	Fractions	P	2	

62	<p>For all positive integers m, $*m* = 3m$ when m is odd and $*m* = \frac{1}{2}m$ when m is even. Which of the following is equivalent to $(*9*)(*6*)$?</p> <p>A) $*81*$ B) $*54*$ C) $*36*$ D) $*27*$ E) $*18*$</p>	EIV	Formulas	P	2	
78	<p>Did one of the 3 members of a certain team sell at least 2 raffle tickets yesterday?</p> <p>(1) The 3 members sold a total of 6 raffle tickets yesterday.</p> <p>(2) No 2 of the members sold the same number of raffle tickets yesterday.</p>	EIV	Inequalities	D	2	
83	<p>If the terms of a sequence are $t_1, t_2, t_3, \dots, t_n$, what is the value of n?</p> <p>(1) The sum of the n terms is 3,124.</p> <p>(2) The average (arithmetic mean) of the n terms is 4.</p>	WT	Averages	D	2	

88	 <p>In the figure above, if x and y are each less than 90 degrees and PS is parallel to QR, is the length of segment PQ less than the length of segment SR?</p> <p>(1) $x > y$</p> <p>(2) $x + y > 90$</p>	GEO	Lines and Angles	D	2	
94	<p>If $z^n = 1$, what is the value of z?</p> <p>(1) n is a nonzero integer.</p> <p>(2) $z > 0$</p>	NP	Exponents	D	2	
99	<p>Are at least 10 percent of the people in Country X who are 65 years old or older employed?</p> <p>(1) In Country X, 11.3 percent of the population is 65 years old or older.</p> <p>(2) In country X, of the population 65 years old or older, 20 percent of the men and 10 percent of the women are employed.</p>	WT	Weighted Average	D	2	

103	<p>If two sides of a triangle have lengths 2 and 5, which of the following could be the perimeter of the triangle?</p> <p>I. 9 II. 15 III. 19</p> <p>A) None B) I only C) II only D) II and III only E) I, II, and III</p>	GEO	Triangles	P	2	
107	<p>At a speed of 50 miles per hours, a certain car uses 1 gallon of gasoline every 30 miles. If the car starts with a full 12-gallon tank of gasoline and travels for 5 hours at 50 miles per hour, the amount of gasoline used would be what fraction of a full tank.</p> <p>A) $\frac{3}{25}$ B) $\frac{11}{36}$ C) $\frac{7}{12}$ D) $\frac{2}{3}$ E) $\frac{25}{36}$</p>	WT	Rate	P	2	
109	<p>A certain one-day seminar consisted of a morning session and an afternoon session. If each of the 128 attending the seminar attended at least one of the two sessions, how many of the people attended the morning session only?</p> <p>(1) $\frac{3}{4}$ of the people attended both sessions.</p> <p>(2) $\frac{7}{8}$ of the people attended the afternoon session.</p>	WT	Overlapping Sets	D	2	

110	<p>Of the 60 animals on a certain farm, $\frac{2}{3}$ are either pigs or cows. How many of the animals are cows?</p> <p>(1) The farm has more than twice as many cows as it has pigs.</p> <p>(2) The farm has more than 12 pigs.</p>	EIV	Inequalities	D	2	
113	<p>What was the percent increase in the population of city K from 1980 to 1990?</p> <p>(1) In 1970 the population of city K was 160,000.</p> <p>(2) In 1980 the population of city K was 20% greater than it was in 1970, and in 1990 the population of city K was 30% greater than it was in 1970.</p>	FDP	Percent Change	D	2	
114	<p>Is z equal to the median of the three positive integers x, y, and z?</p> <p>(1) $x < y + z$</p> <p>(2) $y = z$</p>	WT	Statistics	D	2	
116	<p>A certain list of 100 data has an average (arithmetic mean) of 6 and a standard deviation of d, where d is positive. Which of the following pairs of data, when added to the list, must result in a list of 102 data with standard deviation less than d?</p> <p>A) -6 and 0 B) 0 and 0 C) 0 and 6 D) 0 and 12 E) 6 and 6</p>	WT	Statistics	P	2	

117	<div style="text-align: center;"> m x y z t u  -1 0 1 2 </div> <p>For the numbers on the number line above, which of the following statements is true?</p> <p>A) $x + y > y$ B) $xz > xy$ C) $tz < z$ D) $m^u < 0$ E) $t^m > 0$</p>	NP	Positive / Negative	P	2	
120	<p>In the xy-plane, line k passes through point $(1, 1)$ and line m passes through the point $(1, -1)$. Are lines k and m perpendicular to each other?</p> <p>(1) Lines k and m intersect at the point $(1, -1)$.</p> <p>(2) Line k intersects the x-axis at the point $(1, 0)$.</p>	GEO	Coordinate Geometry	D	2	
124	<p>The mass of 1 cubic meter of a substance is 800 kilograms under certain conditions. What is the volume, in cubic centimeters, of 1 gram of this substance under these conditions? (1 kilogram = 1,000 grams and 1 cubic meter = 1,000,000 cubic centimeters).</p> <p>A) 0.80 B) 1.25 C) 8.00 D) 12.50 E) 80.00</p>	WT	Rate	P	2	

125	<p>If k and t are integers and $k^2 - t^2$ is an odd integer, which of the following must be an even integer?</p> <p>I. $k + t + 2$ II. $k^2 + 2kt + t^2$ III. $k^2 + t^2$</p> <p>A) None B) I only C) II only D) III only E) I, II, and III</p>	NP	Even / Odd	P	2	
126	<p>Is the hundredths digit of the decimal d greater than 5?</p> <p>(1) The tenths digit of $10d$ is 7.</p> <p>(2) The thousandths digit of $\frac{d}{10}$ is 7.</p>	FDP	Digits	D	2	
134	<p>What is the value of xy?</p> <p>(1) $y = x + 1$</p> <p>(2) $y = x^2 + 1$</p>	EIV	Quadratics	D	2	
137	<p>Connie paid a sales tax of 8 percent on her purchase. If the sales tax had been only 5 percent, she would have paid \$12 less in sales tax on her purchase. What was the total amount that Connie paid for her purchase including sale tax?</p> <p>A) \$368 B) \$380 C) \$400 D) \$420 E) \$432</p>	FDP	Percent WP	P	2	

140	<p>S is a finite set of number. Does S contain more negative numbers than positive numbers?</p> <p>(1) The product of all the numbers in S is -1,200.</p> <p>(2) There are 6 numbers in S.</p>	NP	Positive / Negative	D	2	
150	<p>Working alone at its own constant rate, a machine seals k cartons in 8 hours, and working alone at its constant rate, a second machine seals k cartons in 4 hours. If the two machines, each working at its own constant rate and for the same period of time, together sealed a certain number of cartons, what percent of the cartons were sealed by the machine at the faster rate?</p> <p>A) 25%</p> <p>B) $33\frac{1}{3}\%$</p> <p>C) 50%</p> <p>D) $66\frac{2}{3}\%$</p> <p>E) 75%</p>	WT	Work	P	2	
151	<p>If \$1,000 was invested at an annual interest rate of 5.6 percent compounded annually, which of the following represents the amount the investment was worth after 3 years?</p> <p>A) $\\$1,000(1.056)(3)$</p> <p>B) $\\$1,000(3+1.056)$</p> <p>C) $\\$1,000[1+3(0.056)]$</p> <p>D) $\\$1,000[1+(0.056)^3]$</p> <p>E) $\\$1,000(1.056)^3$</p>	FDP	Compound interest	P	2	

152	<p>If x and y are integers, is the value $x(y + 1)$ even?</p> <p>(1) x and y are prime numbers.</p> <p>(2) $y > 7$.</p>	NP	Even / odd	D	2	
154	<p>If set S consists of the numbers 1, 5, -2, 8, and n, is $0 < n < 7$?</p> <p>(1) The median of the numbers in S is less than 5.</p> <p>(2) The median of the numbers in S is greater than 1.</p>	WT	Statistics	D	2	
156	<p>If 500 is the multiple of 100 that is closest to x and 400 is the multiple of 100 that is closest to y, which multiple of 100 is closest to $x + y$?</p> <p>(1) $x < 500$</p> <p>(2) $y < 400$</p>	EIV	Inequalities	D	2	
158	<p>The sum of the first 50 positive even integers is 2,550. What is the sum of the even integers from 102 to 200, inclusive?</p> <p>A) 5,100 B) 7,550 C) 10,100 D) 15,500 E) 20,100</p>	NP	Consecutive Integers	P	2	
161	<p>A certain group of car dealerships agreed to donate x dollars to a red-cross chapter for each car sold during a 30-day period. What was the total amount that was expected to be donated?</p> <p>(1) A total of 500 cars were expected to be sold.</p> <p>(2) 60 more cars were sold than expected, so that the total amount actually donated was \$28,000.</p>	WT	Algebraic Translations	D	2	

164	<p>9.4 9.9 9.9 9.9 10.0 10.2 10.2 10.5</p> <p>The mean and the standard deviation of the 8 numbers shown are 10.0 and 0.3, respectively. What percent of the 8 numbers are within 1 standard deviation of the mean?</p> <p>A) 90% B) 85% C) 80% D) 75% E) 70%</p>	WT	Statistics	P	2	
169	<p>If there are more than two numbers in a certain list, is each of the numbers in the list equal to 0?</p> <p>(1) The product of any two numbers in the list is equal to 0.</p> <p>(2) The sum of any two numbers in the list is equal to 0.</p>	WT	Combinatorics	D	2	
171	<p>Jack and Mark both received hourly wage increases of 6 percent. After the wage increases, Jack's hourly wage was how many dollars per hour more than Mark's?</p> <p>(1) Before the wage increases, Jack's hourly wage was \$5.00 per hour more than Mark's.</p> <p>(2) Before the wage increases, the ratio of Jack's hourly wage to Mark's hourly wage was 4 to 3.</p>	FDP	Percent Change	D	2	
172	<p>List K consists of 12 consecutive integers. If -4 is the least integer in list K, what is the range of the positive integers in list K?</p> <p>A) 5 B) 6 C) 7 D) 11 E) 12</p>	WT	Statistics	P	2	

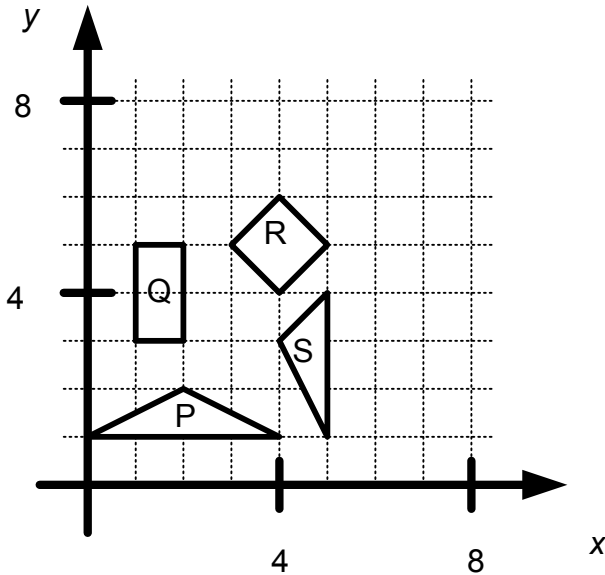
179	<p>An auction house charges a commission of 15 percent on the first \$50,000 of the sale price of an item, plus 10 percent on the amount of the sale price in excess of \$50,000. What was the sale price of a painting for which the auction house charged a total commission of \$24,000?</p> <p>A) \$115,000 B) \$160,000 C) \$215,000 D) \$240,000 E) \$365,000</p>	FDP	Percent WP	P	2	
183	<p>If x is a positive integer, what is the least common multiple of x, 6, and 9?</p> <p>(1) The least common multiple of x and 6 is 30. (2) The least common multiple of x and 9 is 45.</p>	NP	Divisibility	D	2	
184	<p>If a and b are positive numbers, what are the coordinates of the midpoint of line segment CD in the xy-plane?</p> <p>(1) The coordinates of C are $(a, 1 - b)$. (2) The coordinates of D are $(1 - a, b)$.</p>	GEO	Coordinate Geometry	D	2	
194	<p>In 1990 the budgets for projects Q and V were \$660,000 and \$780,000, respectively. In each of the next 10 years, the budget for Q was increased by \$30,000 and the budget for V was decreased by \$10,000. In which year was the budget for Q equal to the budget for V?</p> <p>A) 1992 B) 1993 C) 1994 D) 1995 E) 1996</p>	WT	Algebraic Translations	P	2	

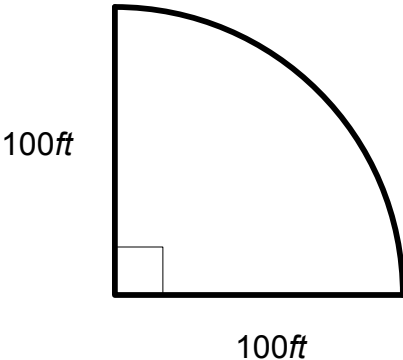
198	<p>If x is a positive integer, is $x < 16$?</p> <p>(1) x is less than the average (arithmetic mean) of the first ten positive integers.</p> <p>(2) x is the square of an integer.</p>	NP	Consecutive Integers	D	2	
199	<p>A garden store purchased a number of shovels and a number of rakes. If the cost of each shovel was \$14 and cost of each rake was \$9, what was the total cost of the shovels and rakes purchased by the store?</p> <p>(1) The ratio of the number of shovels to the number of rakes purchased by the store was 2 to 3.</p> <p>(2) The total number of shovels and rakes purchased by the store was 50.</p>	WT	Ratios	D	2	
201	<p>70, 75, 80, 85, 90, 105, 105, 130, 130, 130</p> <p>The list shown consists of the times, in seconds, that it took each of 10 schoolchildren to run a distance of 400 meters. If the standard deviation of the 10 running times is 22.4 seconds, rounded to the nearest tenth of a second, how many of the 10 running times are more than 1 standard deviation below the mean for the 10 running times?</p> <p>A) One B) Two C) Three D) Four E) Five</p>	WT	Statistics	P	2	
202	<p>If $0 < m < 1$, which of the following expressions has the least value?</p> <p>A) m B) m^2 C) m^3 D) $2 - m$ E) $(m + 1)^2$</p>	FDP	Fractions	P	2	

215	<table><tr><th>Amount Charged</th><th>Percent Bonus</th></tr><tr><td>\$0.01 to \$1,000.00</td><td>0.5</td></tr><tr><td>\$1,000.01 to \$3,000.00</td><td>1.0</td></tr><tr><td>\$3,000.01 to \$6,000.00</td><td>1.5</td></tr><tr><td>\$6,000.01 to \$ 10,000.00</td><td>2.0</td></tr></table> <p>At the end of each year, a certain credit card company pays a bonus to each of its credit card holders based on the amount, up to \$10,000, that the cardholder charged throughout the year. A 0.5 percent bonus is paid on the first \$1,000 charged, a 1.0 percent bonus is paid on the next \$2,000 and so on, as indicated in the table above. What is the maximum annual bonus, in dollars?</p> <p>A) \$100 B) \$150 C) \$200 D) \$250 E) \$500</p>	Amount Charged	Percent Bonus	\$0.01 to \$1,000.00	0.5	\$1,000.01 to \$3,000.00	1.0	\$3,000.01 to \$6,000.00	1.5	\$6,000.01 to \$ 10,000.00	2.0	FDP	Percent WP	P	2
Amount Charged	Percent Bonus														
\$0.01 to \$1,000.00	0.5														
\$1,000.01 to \$3,000.00	1.0														
\$3,000.01 to \$6,000.00	1.5														
\$6,000.01 to \$ 10,000.00	2.0														
217	<p>Amy’s grade was the 90th percentile of the 80 grades for her class. Of the 100 grades from another class, 19 were higher than Amy’s, and the rest were lower. If no other grade was the same as Amy’s grade, then Amy’s grade was what percentile of the grades of the two classes combined?</p> <p>A) 72nd B) 80th C) 81st D) 85th E) 92nd</p>	FDP	Percent WP	P	2										
226	<p>What is the total surface area of rectangular solid R?</p> <p>(1) The surface area of one of the faces of R is 48.</p> <p>(2) The length of one of the edges of R is 3.</p>	GEO	Polygons	D	2										

227	<p>If r and t are positive integers, is rt even?</p> <p>(1) $r + t$ is odd.</p> <p>(2) r/t is odd.</p>	NP	Even / Odd	D	2	
228	<p>If K is a positive three-digit integer, what is the hundreds digit of K?</p> <p>(1) The hundreds digit of $K + 150$ is 4.</p> <p>(2) The tens digit of $K + 25$ is 7.</p>	FDP	Digits	D	2	
229	<p>Juan bought some paperback books that cost \$8 each and some hardcover books that cost \$25 each. If Juan bought more than 10 paperback books, how many hardcover books did he buy?</p> <p>(1) The total cost of the hardcover books that Juan bought was at least \$150.</p> <p>(2) The total cost of all the books that Juan bought was less than \$260.</p>	EIV	Inequalities	D	2	
230	<p>If x and y are integers and $x > 0$, is $y > 0$?</p> <p>(1) $7x - 2y > 0$</p> <p>(2) $-y < x$</p>	NP	Positive / Negative	D	2	
231	<p>If m is a positive odd integer, what is the average (arithmetic mean) of a certain set of m integers?</p> <p>(1) The integers in the set are consecutive multiples of 3.</p> <p>(2) The median of the set of integers is 33.</p>	WT	Statistics	D	2	

235	<table><tr><th>Month</th><th>Number of Days Worked</th></tr><tr><td>June</td><td>20</td></tr><tr><td>July</td><td>17</td></tr><tr><td>August</td><td>19</td></tr></table> <p>The table above shows the number of days worked by a certain sales representative in each of three months last year. If the number of sales calls that the representative made each month was proportional to the number of days worked in that month and if the representative made a total of 168 sales calls in the three months shown, how many sales calls did the representative make in August?</p> <p>A) 50 B) 51 C) 56 D) 57 E) 60</p>	Month	Number of Days Worked	June	20	July	17	August	19	WT	Ratios	P	2
Month	Number of Days Worked												
June	20												
July	17												
August	19												

236	 <p>In the rectangular coordinate system above, for which of the regions is the area 2?</p> <p>A) None B) Q only C) Q and R only D) P, Q, and R only E) P, Q, R, and S</p>	GEO	Triangles	P	2	
237	<p>If a equals the sum of the even integers from 2 to 20, inclusive, and b equals the sum of the odd integers from 1 to 19, inclusive, what is the value of $a - b$?</p> <p>A) 1 B) 10 C) 19 D) 20 E) 21</p>	NP	Consecutive Integers	P	2	

238	 <p>The figure shown represents a piece of land that is in the shape of a quarter circle. If the land is enclosed by a fence, which of the following is closest to the length, in feet, of the fence?</p> <p>A) 278 B) 341 C) 357 D) 400 E) 441</p>	GEO	Circles	P	2	
242	<p>If x and y are integers and $3^{x-4} = 3^{y+2}$, what is y in terms of x?</p> <p>A) $x - 6$ B) $x - 5$ C) $x - 2$ D) $x + 2$ E) $x + 6$</p>	EIV	Exponential Equations	P	2	
243	<p>What is the remainder when the positive integer n is divided by 6?</p> <p>(1) n is a multiple of 5.</p> <p>(2) n is a multiple of 12.</p>	NP	Remainders	D	2	

245	<p>40, 45, 45, 50, 50, 60, 70, 75, 95, 100</p> <p>The scores on a certain history test are shown above. How many scores were greater than the median score but less than the mean score?</p> <p>A) None B) One C) Two D) Three E) Four</p>	WT	Statistics	P	2	
247	<p>For each of her sales, a saleswoman receives a commission equal to 20 percent of the first \$500 of the total amount of the sale, plus 30 percent of the total amount of the sale in excess of \$500. If the total amount of one of her sales was \$800, the saleswoman's commission was approximately what percent of the total amount of the sale?</p> <p>A) 22% B) 24% C) 25% D) 27% E) 28%</p>	FDP	Percent WP	P	2	
252	<p>At a certain college there are twice as many English majors as history majors and three times as many English majors as mathematics majors. What is the ratio of the number of history majors to the number of mathematics majors?</p> <p>A) 6 to 1 B) 3 to 2 C) 2 to 3 D) 1 to 5 E) 1 to 6</p>	WT	Ratios	P	2	

253	<table><tr><td>7.51</td><td>8.22</td><td>7.86</td><td>8.36</td></tr><tr><td>8.09</td><td>7.83</td><td>8.30</td><td>8.01</td></tr><tr><td>7.73</td><td>8.25</td><td>7.96</td><td>8.53</td></tr></table> <p>A vending machine is designed to dispense 8 ounces of coffee into a cup. After a test that recorded the number of ounces of coffee in each of 1,000 cups dispensed by the vending machine, the 12 listed amounts, in ounces, were selected from the data. If the 1,000 recorded amounts have a mean of 8.1 ounces and a standard deviation of 0.3 ounce, how many of the 12 listed amounts are within 1.5 standard deviations of the mean?</p> <p>A) Four B) Six C) Nine D) Ten E) Eleven</p>	7.51	8.22	7.86	8.36	8.09	7.83	8.30	8.01	7.73	8.25	7.96	8.53	WT	Statistics	P	2	
7.51	8.22	7.86	8.36															
8.09	7.83	8.30	8.01															
7.73	8.25	7.96	8.53															
255	<p>What is the average (arithmetic mean) of eleven consecutive integers?</p> <p>(1) The average of the first nine integers is 7.</p> <p>(2) The average of the last nine integers is 9.</p>	NP	Consecutive Integers	D	2													
260	<p>What is the sum of the different positive prime factors of 550?</p> <p>A) 10 B) 11 C) 15 D) 16 E) 18</p>	NP	Divisibility	P	2													

261	<p>An auction house charges a commission of 15 percent on the first \$50,000 of the sale price of an item, plus 10 percent on the amount of the same price in excess of \$50,000. What was the sale price of a painting for which the auction house charged a total commission of \$24,000?</p> <p>A) \$115,000 B) \$160,000 C) \$215,000 D) \$240,000 E) \$365,000</p>	FDP	Percent WP	P	2	
264	<p>Peter and Tom shared the driving on a certain trip. If Peter and Tom drove for the same amount of time, but Peter only drove $\frac{2}{5}$ of the total distance, what was the ratio of Peter's average speed to Tom's average speed?</p> <p>A) 1:5 B) 2:5 C) 1:2 D) 3:5 E) 2:3</p>	WT	Rate	P	2	
265	<p>Mary purchased 3 theater tickets with an average (arithmetic mean) price of \$8. If Mary also purchases a fourth theater ticket with a price of \$16, what is the average price of all 4 tickets?</p> <p>A) \$4 B) \$6 C) \$8 D) \$10 E) \$12</p>	WT	Averages	P	2	

267	<p>What is the total value of Company H's stock?</p> <p>(1) Investor P owns $\frac{1}{4}$ of the shares of Company H's total stock.</p> <p>(2) The total value of Investor Q's shares of Company H's stock is \$16,000.</p>	WT	Tricky Wording	D	2	
268	<p>This morning, a certain sugar container was full. Since then some of the sugar from this container was used to make cookies. If no other sugar was removed from or added to the container, by what percent did the amount of sugar in the container decrease?</p> <p>(1) The amount of sugar in the container after making the cookies would need to be increased by 30 percent to fill the container.</p> <p>(2) Six cups of sugar from the container were used to make the cookies.</p>	FDP	Percent Change	D	2	
279	<p>For which of the following values of x is $\sqrt{1-\sqrt{2-\sqrt{x}}}$ NOT defined as a real number?</p> <p>A) 1 B) 2 C) 3 D) 4 E) 5</p>	NP	Roots	P	2	
280	<p>Are the integers z and f to the right of 0 on the number line?</p> <p>(1) The product of z and f is positive.</p> <p>(2) The sum of z and f is positive.</p>	NP	Positive / Negative	D	2	

281	<p>Is the positive integer j divisible by a greater number of different prime numbers than the positive integer k?</p> <p>(1) j is divisible by 30.</p> <p>(2) $k = 1,000$</p>	NP	Divisibility	D	2	
283	<p>Rasheed bought two kinds of candy bars, chocolate and toffee, that came in packages of 2 bars each. He handed out $\frac{2}{3}$ of the chocolate bars and $\frac{3}{5}$ of the toffee bars. How many packages of chocolate bars did Rasheed buy?</p> <p>(1) Rasheed bought 1 fewer package of chocolate bars than toffee bars.</p> <p>(2) Rasheed handed out the same number of each kind of candy bar.</p>	WT	Algebraic Translations	D	2	
285	<p>What was a certain company's revenue last year?</p> <p>(1) Last year the company's gross profit was \$4,100.</p> <p>(2) Last year the company's revenue was 50 percent greater than its expenses.</p>	FDP	Profit	D	2	
1	<p>Which of the following is equal to the value of $2^5 + 2^5 + 3^5 + 3^5 + 3^5$?</p> <p>A) 5^6</p> <p>B) 13^5</p> <p>C) $2^6 + 3^6$</p> <p>D) $2^7 + 3^8$</p> <p>E) $4^5 + 9^5$</p>	NP	Exponents	P	3	

3	<p>For a finite sequence of nonzero numbers, the number of variations in sign is designated as the number of pairs of consecutive terms of the sequence for which the product of the two consecutive terms is negative. What is the number of variations in sign for the sequence 1, -3, 2, 5, -4, -6?</p> <p>A) One B) Two C) Three D) Four E) Five</p>	WT	Tricky Wording	P	3	
9	<p>For every integer k from 1 to 10, inclusive, the kth term of a certain sequence is given by $(-1)^{k+1}(\frac{1}{2^k})$. If T is the sum of the first 10 terms in the sequence, then T is</p> <p>A) greater than 2. B) between 1 and 2. C) between $\frac{1}{2}$ and 1. D) between $\frac{1}{4}$ and $\frac{1}{2}$. E) less than $\frac{1}{4}$.</p>	EIV	Sequences	P	3	

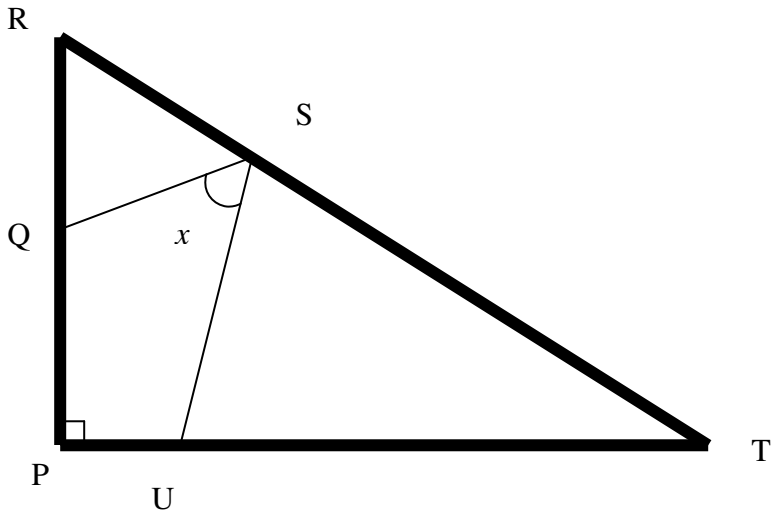
13	<p>At a certain company, the average (arithmetic mean) number of years of experience is 9.8 years for the male employees and 9.1 years for the female employees. What is the ratio of the number of the company's male employees to the number of the company's female employees?</p> <p>(1) There are 52 male employees at the company.</p> <p>(2) The average number of years of experience for the company's male and female employees combined is 9.3 years.</p>	WT	Weighted Average	D	3	
15	<p>Points A, B, C, and D are on a number line, not necessarily in that order. If the distance between A and B is 18 and the distance between C and D is 8, what is the distance between B and D?</p> <p>(1) The distance between C and A is the same as the distance between C and B.</p> <p>(2) A is to the left of D on the number line.</p>	GEO	Lines and Angles	D	3	
18	<p>If \$10,000 is invested at x percent simple annual interest for n years, which of the following represents the total amount of interest, in dollars, that will be earned by this investment in the n years?</p> <p>A) $10,000(x^n)$</p> <p>B) $10,000\left(\frac{x}{100}\right)^n$</p> <p>C) $10,000n\left(\frac{x}{100}\right)$</p> <p>D) $10,000\left(1+\frac{x}{100}\right)^n$</p> <p>E) $10,000n\left(1+\frac{x}{100}\right)$</p>	FDP	Compound Interest	P	3	

25	<p>In a certain senior class, 72 percent of the male students and 80 percent of the female students have applied to college. What fraction of the students in the senior class are male?</p> <p>(1) There are 840 students in the senior class.</p> <p>(2) 75 percent of the students in the senior class have applied to college.</p>	WT	Weighted Average	D	3	
27	<p>In the xy-plane, the line k passes through the origin and through the point (a,b), where $ab \neq 0$. Is b positive?</p> <p>(1) The slope of line k is negative.</p> <p>(2) $a < b$</p>	GEO	Coordinate geometry	D	3	
29	<p>If $(400)(6,000) = (240)(100^x)$, what is the value of x?</p> <p>A) 5 B) 4 C) 3 D) 2 E) 1</p>	EIV	Exponential Equations	P	3	
32	<p>In May Mrs. Lee's earnings were 60 percent of the Lee family's total income. In June Mrs. Lee earned 20 percent more than in May. If the rest of the family's income was the same both months, then, in June, Mrs. Lee's earnings were approximately what percent of the Lee family's total income?</p> <p>A) 64% B) 68% C) 72% D) 76% E) 80%</p>	FDP	Percent WP	P	3	

33	<p>Three grades of milk are 1 percent, 2 percent, and 3 percent fat by volume. If x gallons of the 1 percent grade, y gallons of the 2 percent grade, and z gallons of the 3 percent grade are mixed to give $x + y + z$ gallons of a 1.5 percent grade, what is x in terms of y and z?</p> <p>A) $y + 3z$</p> <p>B) $\frac{y + z}{4}$</p> <p>C) $2y + 3z$</p> <p>D) $3y + z$</p> <p>E) $3y + 4.5z$</p>	FDP	Percent WP	P	3	
38	<p>In a certain year the United Nations' total expenditures were \$1.6 billion. Of this amount, 67.8 percent was paid by the 6 highest-contributing countries, and the balance was paid by the remaining 153 countries. Was Country X among the highest-contributing countries?</p> <p>(1) 56 percent of the total expenditures was paid by the 4 highest-contributing countries, each of which paid more than Country X.</p> <p>(2) Country X paid 4.8 percent of the total expenditures.</p>	FDP	Percent WP	D	3	
44	<p>In 1999 Company X's gross profit was what percent of its revenue?</p> <p>(1) In 1999 Company X's gross profit was $\frac{1}{3}$ of its expenses.</p> <p>(2) In 1999 Company X's expenses were $\frac{3}{4}$ of its revenue.</p>	FDP	Profit	D	3	

45	<p>What is the greatest common divisor of positive integers m and n?</p> <p>(1) m is a prime number.</p> <p>(2) $2n = 7m$</p>	NP	Divisibility	D	3	
48	<p>If x and y are integers greater than 1, is x a multiple of y?</p> <p>(1) $3y^2 + 7y = x$</p> <p>(2) $x^2 - x$ is multiple of y</p>	NP	Divisibility	D	3	
50	<p>If $x > y^2 > z^4$, which of the following statements could be true?</p> <p>I. $x > y > z$ II. $z > y > x$ III. $x > z > y$</p> <p>(A) I only (B) I and II only (C) I and III only (D) II and III only (E) I, II, and III</p>	NP	Exponents	P	3	
51	<p>Three boxes of supplies have an average (arithmetic mean) weight of 7 kilograms and a median weight of 9 kilograms. What is the maximum possible weight, in kilograms, of the lightest box?</p> <p>A) 1 B) 2 C) 3 D) 4 E) 5</p>	WT	Statistics	P	3	

56	<p>A construction company was paid a total of \$500,000 for a construction project. The company's only costs for the project were for labor and materials. Was the company's profit for the project greater than \$150,000?</p> <p>(1) The company's total cost was three times its cost for materials.</p> <p>(2) The company's profit was greater than its cost for labor.</p>	EIV	Inequalities	D	3	
60	<p>Six countries in a certain region sent a total of 75 representatives to an international congress, and no two countries sent the same number of representatives. Of the six countries, if country <i>A</i> sent the second greatest number of representatives, did country <i>A</i> send at least 10 representatives?</p> <p>(1) One of the six countries sent 41 representatives to the congress.</p> <p>(2) Country <i>A</i> sent fewer than 12 representatives to the congress.</p>	EIV	Inequalities	D	3	

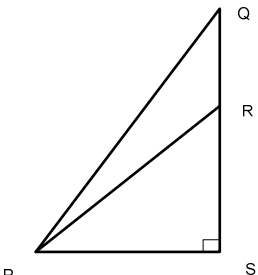
64	 <p>In the figure shown, what is the value of x?</p> <p>(1) The length of line segment QR is equal to the length of line segment RS.</p> <p>(2) The length of line segment ST is equal to the length of line segment TU.</p>	GEO	Triangles	D	3	
65	<p>In a certain year, the difference between Mary's and Jim's annual salaries was twice the difference between Mary's and Kate's annual salaries. If Mary's annual salary was the highest of the 3 people, what was the average (arithmetic mean) annual salary of the 3 people that year?</p> <p>(1) Jim's annual salary was \$30,000 that year.</p> <p>(2) Kate's annual salary was \$40,000 that year</p>	WT	Averages	D	3	
66	<p>Did it take Pei more than 2 hours to walk a distance of 10 miles along a certain trail? (1 mile = 1.6 kilometers, rounded to the nearest tenth.)</p> <p>(1) Pei walked this distance at an average rate of less than 6.4 kilometers per hour.</p> <p>(2) On average, it took Pei more than 9 minutes per kilometer to walk this distance.</p>	WT	Rate	D	3	

67	<div data-bbox="232 205 760 676" data-label="Image"> </div> <p>In the figure above, equilateral triangle ABC is inscribed in the circle. If the length of arc ABC is 24, what is the approximate diameter of the circle?</p> <p>A) 5 B) 8 C) 11 D) 15 E) 19</p>	GEO	Circles	P	3	
68	<p>The number 75 can be written as the sum of the squares of 3 different positive integers. What is the sum of these 3 integers?</p> <p>A) 17 B) 16 C) 15 D) 14 E) 13</p>	NP	Divisibility	P	3	

69	<p>What is the remainder when the positive integer x is divided by 6?</p> <p>(1) When x is divided by 2, the remainder is 1; and when x is divided by 3, the remainder is 0.</p> <p>(2) When x is divided by 12, the remainder is 3.</p>	NP	Remainders	D	3	
72	<p>Six machines, each working at the same constant rate, together can complete a certain job in 12 days. How many additional machines, each working at the same constant rate, will be needed to complete the job in 8 days?</p> <p>A) 2 B) 3 C) 4 D) 6 E) 8</p>	WT	Work	P	3	
73	<p>If $M = \sqrt{4} + \sqrt[3]{4} + \sqrt[4]{4}$ then the value of M is</p> <p>A) less than 3 B) equal to 3 C) between 3 and 4 D) equal to 4 E) greater than 4</p>	NP	Roots	P	3	
81	<p>The positive integers x, y, and z are such that x is a factor of y and y is a factor of z. Is z even?</p> <p>(1) y is even (2) xz is even</p>	NP	Even / Odd	D	3	
82	<p>Each of the students in a certain class received a single grade of P, F, or I. What percent of the students in the class were females?</p> <p>(1) Of those who received a P, 40 percent were females.</p> <p>(2) Of those who received either an F or I, 80 percent were males.</p>	WT	Weighted Average	D	3	

85	<p>On the number line, if the number k is to the left of the number t, is the product kt to the right of t?</p> <p>(1) $t < 0$</p> <p>(2) $k < 1$</p>	NP	Positive / Negative	D	3	
90	<p>If n is a multiple of 5 and $n = p^2q$, where p and q are prime numbers, which of the following must be a multiple of 25?</p> <p>A) p^2</p> <p>B) q^2</p> <p>C) pq</p> <p>D) p^2q^2</p> <p>E) p^3q</p>	NP	Divisibility	D	3	
92	<p>If $x \neq 0$, then $\frac{\sqrt{x^2}}{x} =$</p> <p>A) -1</p> <p>B) 0</p> <p>C) 1</p> <p>D) x</p> <p>E) $\frac{ x }{x}$</p>	EIV	Absolute Value	P	3	
95	<p>When 1,000 children were inoculated with a certain vaccine, some developed inflammation at the site of the inoculation and some developed fever. How many of the children developed inflammation but not fever?</p> <p>(1) 880 children developed neither inflammation nor fever.</p> <p>(2) 20 children developed fever.</p>	WT	Overlapping Sets	D	3	

97	<p>If Bob produces 36 or fewer items in a week, he is paid x dollars per item. If Bob produces more than 36 items in a week, he is paid x dollars per item for the first 36 items and $1\frac{1}{2}$ times that amount for each additional item. How many items did Bob produce last week?</p> <p>(1) Last week Bob was paid a total of \$480 for the items that he produced that week.</p> <p>(2) This week Bob produced 2 items more than last week and was paid a total of \$510 for the items that he produced this week.</p>	WT	Algebraic Translations	D	3	
98	<p>If n and t are positive integers, what is the greatest prime factor of the product nt?</p> <p>(1) The greatest common factor of n and t is 5.</p> <p>(2) The least common multiple of n and t is 105.</p>	NP	Divisibility	D	3	
100	<p>At a dinner party, 5 people are to be seated around a table. Two seating arrangements are considered different only when the positions of the people are different relative to each other. What is the total number of different possible seating arrangement for the group?</p> <p>A) 5 B) 10 C) 24 D) 32 E) 120</p>	WT	Combinatorics	P	3	

104	<div></div> <p>In the figure shown, the measure of angle PRS is how many degrees greater than the measure of angle PQR?</p> <p>(1) The measure of angle QPR is 30 degrees.</p> <p>(2) The sum of the measures of angles PQR and PRQ is 150 degrees.</p>	GEO	Triangles	D	3												
108	<table border="1"><tr><td>Amount earned per day</td><td>\$96</td><td>\$84</td><td>\$80</td><td>\$70</td><td>\$48</td></tr><tr><td>Number of days</td><td>4</td><td>7</td><td>4</td><td>3</td><td>2</td></tr></table> <p>A student worked for 20 days. For each of the amount shown in the first row of the table, the second row gives the number of days that the student earned that amount. What is the median amount of money that the student earned per day for the 20 days?</p> <p>A) 96 B) 84 C) 80 D) 70 E) 48</p>	Amount earned per day	\$96	\$84	\$80	\$70	\$48	Number of days	4	7	4	3	2	WT	Statistics	P	3
Amount earned per day	\$96	\$84	\$80	\$70	\$48												
Number of days	4	7	4	3	2												
112	<p>If x and y are positive integers, is the product xy even?</p> <p>(1) $5x - 4y$ is even.</p> <p>(2) $6x + 7y$ is even.</p>	NP	Even / Odd	D	3												

118	<p>Over a certain time period, did the number of shares of stock in Ruth's portfolio increase?</p> <p>(1) Over the time period, the ratio of the number of shares of stock to the total number of shares of stocks and bonds in Ruth's portfolio increased.</p> <p>(2) Over the time period the total number of shares of stocks and bonds in Ruth's portfolio increased.</p>	WT	Ratios	D	3	
119	<p>If $x - y > 10$, is $x - y > x + y$?</p> <p>(1) $x = 8$</p> <p>(2) $y = -20$</p>	EIV	Inequalities	D	3	
121	<p>What is the average (arithmetic mean) height of the n people in a certain group?</p> <p>(1) The average height of the $\frac{n}{3}$ tallest people in the group is 6 feet $2\frac{1}{2}$ inches, and the average height of the rest of the people in the group is 5 feet 10 inches.</p> <p>(2) The sum of the heights of the n people is 178 feet 9 inches.</p>	WT	Weighted Average	D	3	
122	<p>What is the remainder when the positive integer n is divided by the positive integer k, where $k > 1$?</p> <p>(1) $n = (k + 1)^3$</p> <p>(2) $k = 5$</p>	NP	Remainders	D	3	
129	<p>If v and w are different integers, is $v = 0$?</p> <p>(1) $vw = v^2$</p> <p>(2) $w = 2$</p>	EIV	Quadratics	D	3	

130	<p>Whenever Martin has a restaurant bill with an amount between \$10 and \$99, he calculates the dollar amount of the tip as 2 times the tens digit of the amount of his bill. If the amount of Martin's most recent restaurant bill was between \$10 and \$99, was the tip calculated by Martin on this bill greater than 15 percent of the amount of the bill?</p> <p>(1) The amount of the bill was between \$15 and \$50.</p> <p>(2) The tip calculated by Martin was \$8.</p>	FDP	Percent WP	D	3	
131	<p>If x and y are points on the number line, what is the value of $x + y$?</p> <p>(1) 6 is halfway between x and y.</p> <p>(2) $y = 2x$</p>	WT	Averages	D	3	
132	<p>If m is a positive <u>odd</u> integer between 2 and 30, then m is divisible by how many different positive prime numbers?</p> <p>(1) m is not divisible by 3.</p> <p>(2) m is not divisible by 5.</p>	NP	Divisibility	D	3	
133	<p>Is the three-digit number n less than 550?</p> <p>(1) The product of the digits in n is 30.</p> <p>(2) The sum of the digits in n is 10.</p>	NP	Divisibility	D	3	

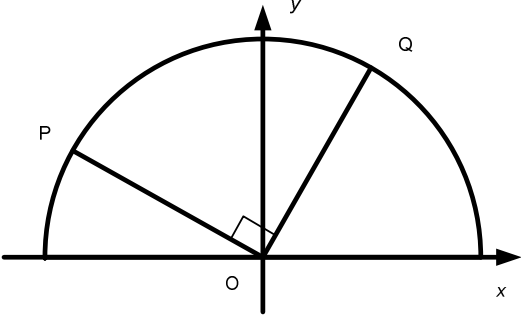
138	<table><tr><td>Ann</td><td>\$450,000</td></tr><tr><td>Bob</td><td>\$360,000</td></tr><tr><td>Cal</td><td>\$190,000</td></tr><tr><td>Dot</td><td>\$210,000</td></tr><tr><td>Ed</td><td>\$680,000</td></tr></table> <p>The table above shows the total sales recorded in July for the 5 salespeople at ACME truck sales. It was discovered that one of Cal's sales was incorrectly recorded as one of Ann's sales. After this error was corrected, Ann's total sales were still higher than Cal's total sales, and the median of the 5 sales totals was \$330,000. What was the value of the incorrectly recorded sale?</p> <p>A) \$30,000 B) \$48,000 C) \$90,000 D) \$120,000 E) \$140,000</p>	Ann	\$450,000	Bob	\$360,000	Cal	\$190,000	Dot	\$210,000	Ed	\$680,000	WT	Statistics	P	3
Ann	\$450,000														
Bob	\$360,000														
Cal	\$190,000														
Dot	\$210,000														
Ed	\$680,000														
139	<p>Machine A produces pencils at a constant rate of 9,000 per hour, and machine B produces pencils at a constant rate of 7,000 pencils per hour. If the two machines together must produce 100,000 pencils and if each machine can operate for at most 8 hours, what is the least amount of time, in hours, that machine B must operate?</p> <p>A) 4 B) $4\frac{2}{3}$ C) $5\frac{1}{3}$ D) 6 E) $6\frac{1}{4}$</p>	WT	Work	P	3										

146	<p>A set of 15 different integers has a median of 25 and a range of 25. What is the greatest possible integer that could be in this set?</p> <p>A) 32 B) 37 C) 40 D) 43 E) 50</p>	WT	Statistics	P	3	
147	<p>How many different prime numbers are factors of the positive integer n?</p> <p>(1) Four different prime numbers are factors of $2n$.</p> <p>(2) Four different prime numbers are factors of n^2.</p>	NP	Divisibility	D	3	
148	<p>If x is a positive number less than 10, is z greater than the average (arithmetic mean) of x and 10?</p> <p>(1) On the number line, z is closer to 10 than it is to x.</p> <p>(2) $z = 5x$</p>	WT	Averages	D	3	
153	<p>If $-2x > 3y$, is x negative?</p> <p>(1) $y > 0$</p> <p>(2) $2x + 5y - 20 = 0$</p>	EIV	Inequalities	D	3	

157	<p>For all numbers x such that $x \neq 1$, if $g(x)$ is defined by</p> $g(x) = \frac{x^2 + 2}{x - 1}, \text{ then } \left(\frac{1}{g(2)} \right) \left(\frac{1}{g(x)} \right) =$ <p>A) $\frac{6(x-1)}{x^2 + 2}$</p> <p>B) $\frac{6(x^2 + 2)}{x - 1}$</p> <p>C) $\frac{x^2 + 2}{2(x-1)}$</p> <p>D) $\frac{x - 1}{6(x^2 + 2)}$</p> <p>E) $\frac{x^2 + 2}{6(x-1)}$</p>	EIV	Functions	P	3	
159	<p>$2 + 2 + 2^2 + 2^3 + 2^4 + 2^5 + 2^6 + 2^7 + 2^8 =$</p> <p>A) 2^9</p> <p>B) 2^{10}</p> <p>C) 2^{16}</p> <p>D) 2^{35}</p> <p>E) 2^{37}</p>	NP	Exponents	P	3	
160	<p>Of the 800 employees of company X, 70 percent have been with the company for at least ten years. If y of these "long-term" members were to retire and no other employee changes were to occur, what value of y would reduce the percent of "long-term" employees in the company to 60 percent?</p> <p>A) 200</p> <p>B) 160</p> <p>C) 112</p> <p>D) 80</p> <p>E) 56</p>	FDP	Percent WP	P	3	

162	<p>The lifetimes of all the batteries produced by a certain company in a year have a distribution that is symmetric about the mean m. If the distribution has a standard deviation d, what percent of the distribution is greater than $m + d$?</p> <p>(1) 68 percent of the distribution lies in the interval from $m - d$ to $m + d$, inclusive.</p> <p>(2) 16 percent of the distribution is less than $m - d$.</p>	WT	Statistics	D	3	
163	<p>The ratio of the amount of Alex's fuel oil bill for the month of February to the amount of his fuel oil bill for the month of January was $\frac{3}{2}$. If the fuel oil bill for February had been \$40 more, the corresponding ratio would have been $\frac{5}{3}$. How much was Alex's fuel oil bill for January?</p> <p>A) \$240 B) \$300 C) \$360 D) \$450 E) \$540</p>	WT	Ratios	P	3	

165	<p>The function f is defined for all positive integers n by the following rule: $f(n)$ is the number of positive integer each of which is less than n and has no positive factor in common with n other than 1. If p is any prime number then $f(p) =$</p> <p>A) $p - 1$</p> <p>B) $p - 2$</p> <p>C) $\frac{p+1}{2}$</p> <p>D) $\frac{p-1}{2}$</p> <p>E) 2</p>	NP	Divisibility	P	3	
166	<p>If $x \neq -y$, is $\frac{x-y}{x+y} > 1$?</p> <p>(1) $x > 0$</p> <p>(2) $y < 0$</p>	EIV	Inequalities	D	3	
168	<p>Which of the following inequalities has a solution set that, when graphed on the number line, is a single line segment of finite length?</p> <p>A) $x^4 \geq 1$</p> <p>B) $x^3 \leq 27$</p> <p>C) $x^2 \geq 16$</p> <p>D) $2 \leq x \leq 5$</p> <p>E) $2 \leq 3x + 4 \leq 6$</p>	EIV	Inequalities	P	3	

170	 <p>In the figure above, points P and Q lie on the circle with center O and have xy coordinates $(-\sqrt{3}, 1)$ and (s, t), respectively. What is the value of s?</p> <p>A) $\frac{1}{2}$</p> <p>B) 1</p> <p>C) $\sqrt{2}$</p> <p>D) $\sqrt{3}$</p> <p>E) $\frac{\sqrt{3}}{2}$</p>	GEO	Coordinate Geometry	P	3	
173	<p>If $\left(\frac{1}{5}\right)^m \left(\frac{1}{4}\right)^{18} = \frac{1}{2(10)^{35}}$, then $m =$</p> <p>A) 17</p> <p>B) 18</p> <p>C) 34</p> <p>D) 35</p> <p>E) 36</p>	EIV	Exponential Equations	P	3	

174	<p>The perimeter of a certain isosceles right triangle is $16+16\sqrt{2}$. What is the length of the hypotenuse of the triangle?</p> <p>A) 8</p> <p>B) 16</p> <p>C) $4\sqrt{2}$</p> <p>D) $8\sqrt{2}$</p> <p>E) $16\sqrt{2}$</p>	GEO	Triangles	P	3	
175	<p>Each of the 25 balls in a certain box is either red, blue, or white and has a number from 1 to 10 painted on it. If one ball is to be selected at random from the box, what is the probability that the ball selected will either be white or have an even number painted on it?</p> <p>(1) The probability that the ball will both be white and have an even number painted on it is 0.</p> <p>(2) The probability that the ball will be white minus the probability that the ball will have an even number painted on it is 0.2.</p>	WT	Probability	D	3	
193	<p>If the product of the three digits of the positive integer k is 14, what is the value of k?</p> <p>(1) k is an odd integer.</p> <p>(2) $k < 700$</p>	NP	Divisibility	D	3	
203	<p>A certain list consists of several different integers. Is the product of all the integers in the list positive?</p> <p>(1) The product of the greatest and smallest of the integers in the list is positive.</p> <p>(2) There is an even number of integers in the list.</p>	NP	Positive / Negative	D	3	

204	<p>How many more first-time jobless claims were filed in week P than in week T?</p> <p>(1) For weeks P, Q, R, and S, the average (arithmetic mean) number of first-time jobless claims filed was 388,250.</p> <p>(2) For weeks Q, R, S, and T, the average (arithmetic mean) number of first-time jobless claims filed was 383,000.</p>	WT	Averages	D	3	
205	<p>If n is a positive integer and r is the remainder when $n^2 - 1$ is divided by 8, what is the value of r?</p> <p>(1) n is odd.</p> <p>(2) n is not divisible by 8.</p>	NP	Consecutive Integers	D	3	
206	<p>On the number line, the distance between point A and point C is 5 and the distance between point B and point C is 20. Does point C lie between point A and point B?</p> <p>(1) The distance between point A and point B is 25.</p> <p>(2) Point A lies to the left of point B.</p>	GEO	Lines and Angles	D	3	
207	<p>Are positive integers p and q both greater than n?</p> <p>(1) $p - q$ is greater than n.</p> <p>(2) $q > p$</p>	EIV	Inequalities	D	3	
209	<p>Warehouse W's revenue from the sale of sofas was what percent greater this year than it was last year?</p> <p>(1) Warehouse W sold 10 percent more sofas this year than it did last year.</p> <p>(2) Warehouse W's selling price per sofa was \$30 greater this year than it was last year.</p>	FDP	Percent Change	D	3	

210	<p>If K is a positive three-digit integer, what is the hundreds digit of K?</p> <p>(1) The hundreds digit of $K + 150$ is 4.</p> <p>(2) The tens digit of $K + 25$ is 7.</p>	FDP	Digits	D	3	
212	<p>All the clients that Company X had at the beginning of last year remained with the company for the whole year. If Company X acquired new clients during the year, what was the ratio of the number of clients that Company X had at the end of last year to the number of clients that it had at the beginning of last year?</p> <p>(1) The ratio of the number of clients that Company X had at the beginning of last year to the number of new clients that it acquired during the year was 12 to 1.</p> <p>(2) Company X had 144 clients at the beginning of last year.</p>	WT	Ratios	D	3	
213	<p>On his trip from Alba to Benton, Julio drove the first x miles at an average rate of 50 miles per hour and the remaining distance at an average rate of 60 miles per hour. How long did it take Julio to drive the first x miles?</p> <p>(1) On this trip, Julio drove for a total of 10 hours and drove a total of 530 miles.</p> <p>(2) On this trip, it took Julio 4 more hours to drive the first x miles than to drive the remaining distance.</p>	WT	Rate	D	3	

216	<p>In a class of 30 students, 2 students did not borrow any books from the library, 12 students each borrowed 1 book, 10 students each borrowed 2 books, and the rest of the students each borrowed at least 3 books. If the average (arithmetic mean) number of books borrowed per students was 2, what is the maximum number of books that any single student could have borrowed?</p> <p>A) 3 B) 5 C) 8 D) 13 E) 15</p>	WT	Averages	P	3	
219	<p>A certain movie depicted product A in 21 scenes, product B in 7 scenes, product C in 4 scenes, and product D in 3 scenes. The four product manufacturers paid amounts proportional to the number of scenes in which their product was depicted in the movie. If each manufacturer paid x dollars per scene, how much did the manufacturer of product D pay for this advertising?</p> <p>(1) The manufacturers of products A and B together paid a total of \$560,000 for this advertising.</p> <p>(2) The manufacturer of product B paid \$60,000 more for this advertising than the manufacturer of product C paid.</p>	WT	Ratios	D	3	
221	<p>Is positive integer n divisible by 3?</p> <p>(1) $\frac{n^2}{36}$ is an integer.</p> <p>(2) $\frac{144}{n^2}$ is an integer.</p>	NP	Divisibility	D	3	

223	<p>To celebrate a colleague's retirement, the T coworkers in an office agreed to share equally the cost of a catered lunch. If the lunch costs a total of x dollars and S of the coworkers fail to pay their share, which of the following represents the additional amount, in dollars, that each of the remaining coworkers would have to contribute so that the cost of the lunch is completely paid?</p> <p>A) $\frac{x}{T}$</p> <p>B) $\frac{x}{T-S}$</p> <p>C) $\frac{Sx}{T-S}$</p> <p>D) $\frac{Sx}{T(T-S)}$</p> <p>E) $\frac{x(T-S)}{T}$</p>	EIV	VIC	P	3	
225	<p>If $mv < pv < 0$, is $v > 0$?</p> <p>(1) $m < p$</p> <p>(2) $m < 0$</p>	NP	Positive / Negative	D	3	
232	<p>How much time did it take a certain car to travel 400 kilometers?</p> <p>(1) The car traveled the first 200 kilometers in 2.5 hours.</p> <p>(2) If the car's average speed had been 20 kilometers per hour greater than it was, it would have traveled the 400 kilometers in 1 hour less time than it did.</p>	WT	Rate	D	3	

240	<p>If $a > b > 0$, then $\sqrt{a^2 - b^2} =$</p> <p>A) $a + b - \sqrt{2ab}$</p> <p>B) $a - b + \sqrt{2ab}$</p> <p>C) $\sqrt{(a - b)^2 - 2ab}$</p> <p>D) $(\sqrt{a + b})(\sqrt{a - b})$</p> <p>E) $(\sqrt{a} + \sqrt{b})(\sqrt{a} - \sqrt{b})$</p>	EIV	Quadratics	P	3	
241	<p>The total price of a basic computer and a printer was \$2,500. If the same printer had been purchased with an enhanced computer whose price was \$500 more than the price of the basic computer, then the price of the printer would have been $\frac{1}{5}$ of that total. What was the price of the basic computer?</p> <p>A) \$1,500</p> <p>B) \$1,600</p> <p>C) \$1,750</p> <p>D) \$1,900</p> <p>E) \$2,000</p>	WT	Algebraic Translations	P	3	
244	<p>If $x = \frac{1}{2}$, is y equal to 1?</p> <p>(1) $y^2\left(x + \frac{1}{2}\right) = 1$</p> <p>(2) $y(2x - 1) = 2x - 1$</p>	EIV	Basic Equations	D	3	

246	<p>A basket contains 5 apples, of which 1 is spoiled and the rest are good. If Henry is to select 2 apples from the basket simultaneously and at random, what is the probability that the 2 apples selected will include the spoiled apple?</p> <p>A) $\frac{1}{5}$</p> <p>B) $\frac{3}{10}$</p> <p>C) $\frac{2}{5}$</p> <p>D) $\frac{1}{2}$</p> <p>E) $\frac{3}{5}$</p>	WT	Combinatorics	P	3	
249	<p>Is $x > y$?</p> <p>(1) $x^2 > y^2$</p> <p>(2) $x > y$</p>	EIV	Inequalities	D	3	
250	<p>Ann deposited money into two new accounts, A and B. Account A earns 5 percent simple annual interest and account B earns 8 percent simple annual interest. If there were no other transactions in the two accounts, then the amount of interest that account B earned in the first year was how many dollars greater than the amount of interest that account A earned in the first year?</p> <p>(1) Ann deposited \$200 more in account B than in account A.</p> <p>(2) The total amount of interest that the two accounts earned in the first year was \$120.</p>	FDP	Percent WP	D	3	

251	<p>In a certain conference room each row of chairs has the same number of chairs, and the number of rows is 1 less than the number of chairs in a row. How many chairs are in a row?</p> <p>(1) There is a total 72 chairs.</p> <p>(2) After 1 chair is removed from the last row, there is a total of 17 chairs in the last 2 rows.</p>	WT	Algebraic Translations	D	3	
254	<p>If p is a positive integer, what is the value of p?</p> <p>(1) $\frac{p}{4}$ is a prime number.</p> <p>(2) p is divisible by 3.</p>	NP	Divisibility	D	3	
256	<p>Each person attending a fund-raising party for a certain club was charged the same admission fee. How many people attended the party?</p> <p>(1) If the admission fee had been \$0.75 less and 100 more people had attended, the club would have received the same amount in admission fees.</p> <p>(2) If the admission fee had been \$1.50 more and 100 fewer people had attended, the club would have received the same amount in admission fees.</p>	WT	Algebraic Translations	D	3	
258	<p>In a certain game, the units of currency of three countries are the crown, the shield, and the pound, respectively. If 2 crowns equal 3 shields and 3 shields equal 4 pounds, how many crowns equal 18 pounds?</p> <p>A) 9 B) 16 C) 18 D) 32 E) 36</p>	WT	Rate	P	3	

259	<p>At a certain pet shop, $\frac{1}{3}$ of the pets are dogs and $\frac{1}{5}$ of the pets are birds. How many of the pets are dogs?</p> <p>(1) There are 30 birds at the pet shop.</p> <p>(2) There are 20 more dogs than birds at the pet shop.</p>	FDP	Fraction WP	D	3	
263	<p>If a, b, and m are positive integers, is a^k a factor of b^m?</p> <p>(1) a is a factor of b</p> <p>(2) $k \leq m$</p>	NP	Divisibility	D	3	
266	<p>Of the 800 students at a certain college, 250 students live on campus and are more than 20 years old. How many of the 800 students live on campus and are 20 years old or less?</p> <p>(1) 640 students at the college are more than 20 years old.</p> <p>(2) 60 students at the college are 20 years old or less and live off campus.</p>	WT	Overlapping Sets	D	3	
274	<p>If q is a positive integer less than 17 and r is the remainder when 17 is divided by q, what is the value of r?</p> <p>(1) $q > 10$</p> <p>(2) $q = 2^k$, where k is a positive integer.</p>	NP	Divisibility	D	3	

276	<p>P, Q, and R are located in a flat region of a certain state. Q is x miles due east of P and y miles due north of R. Each pair of points is connected by a straight road. What is the number of hours needed to drive from Q to R and then from R to P at a constant rate of z miles per hour, in terms of x, y, and z? (Assume x, y, and z are positive.)</p> <p>A) $\frac{\sqrt{x^2 + y^2}}{z}$</p> <p>B) $\frac{x + \sqrt{x^2 + y^2}}{z}$</p> <p>C) $\frac{y + \sqrt{x^2 + y^2}}{z}$</p> <p>D) $\frac{z}{x + \sqrt{x^2 + y^2}}$</p> <p>E) $\frac{z}{y + \sqrt{x^2 + y^2}}$</p>	WT	Rate	P	3	
278	<p>If n denotes a number to the left of 0 on the number line such that the square of n is less than $\frac{1}{100}$, then the reciprocal of n must be</p> <p>A) less than -10</p> <p>B) between -1 and $-\frac{1}{10}$</p> <p>C) between $-\frac{1}{10}$ and 0</p> <p>D) between 0 and $\frac{1}{10}$</p> <p>E) greater than 10</p>	EIV	Inequalities	P	3	

282	<p>If $a > 0$, $b > 0$, and $c > 0$, is $a(b - c) = 0$?</p> <p>(1) $b - c = c - b$</p> <p>(2) $\frac{b}{c} = \frac{c}{b}$</p>	EIV	Basic Equations	D	3	
284	<p>At a certain refreshment stand, all hot dogs have the same price and all sodas have the same price. What is the total price of 3 hot dogs and 2 sodas at the refreshment stand?</p> <p>(1) The total price of 5 sodas at the stand is less than the total price of 2 hot dogs.</p> <p>(2) The total price of 9 hot dogs and 6 sodas at the stand is \$21.</p>	EIV	Combo	D	3	
286	<p>Joshua and Jose work at an auto repair center with 4 other workers. For a survey on healthcare insurance, 2 of the 6 workers will be randomly chosen to be interviewed. What is the probability that Joshua and Jose will both be chosen?</p> <p>A) $\frac{1}{15}$</p> <p>B) $\frac{1}{12}$</p> <p>C) $\frac{1}{9}$</p> <p>D) $\frac{1}{6}$</p> <p>E) $\frac{1}{3}$</p>	WT	Combinatorics	P	3	

287	<p>Bobby bought two shares of stock, which he sold for \$96 each. If he had a profit of 20 percent on the sale of one of the shares but a loss of 20 percent on the sale of the other share, then on the sale of both shares combined Bobby had</p> <p>A) a profit of \$10 B) a profit of \$8 C) a loss of \$8 D) a loss of \$10 E) neither a profit nor a loss</p>	FDP	Profit	P	3	
288	<p>For a certain exam, a score of 58 was two standard deviations below the mean, and a score of 98 was three standard deviations above the mean. What was the mean for the exam?</p> <p>A) 74 B) 76 C) 78 D) 80 E) 82</p>	WT	Statistics	P	3	
4	<p>Circular gears P and Q start rotating at the same time at constant speeds. Gear P makes 10 revolutions per minute, and gear Q makes 40 revolutions per minute. How many <u>seconds</u> after the gears start rotating will gear Q have made exactly 6 more revolutions than gear P?</p> <p>A) 6 B) 8 C) 10 D) 12 E) 15</p>	WT	Rate	P	4	
14	<p>On a certain sight-seeing tour, the ratio of the number of women to the number of children was 5 to 2. What was the number of men on the sight-seeing tour?</p> <p>(1) On the sight-seeing tour, the ratio of the number of children to the number of men was 5 to 11. (2) The number of women on the sight-seeing tour was less than 30.</p>	WT	Ratios	D	4	

16	<p>A list of measurements in increasing order is 4, 5, 6, 8, 10, and x. If the median of these measurements is $\frac{6}{7}$ times their arithmetic mean, what is the value of x?</p> <p>A) 16 B) 15 C) 14 D) 13 E) 12</p>	WT	Statistics	P	4	
17	<p>A thin piece of wire 40 meters long is cut into two pieces. One piece is used to form a circle with radius r, and the other is used to form a square. No wire is left over. Which of the following represents the total area, in square meters, of the circular and the square regions in terms of r?</p> <p>A) πr^2 B) $\pi r^2 + 10$ C) $\pi r^2 + \frac{1}{4} \pi^2 r^2$ D) $\pi r^2 + (40 - 2\pi r)^2$ E) $\pi r^2 + (10 - \frac{1}{2} \pi r)^2$</p>	GEO	Circles	P	4	
24	<p>If $ab \neq 0$ and points $(-a, b)$ and $(-b, a)$ are in the same quadrant of the xy-plane, is point $(-x, y)$ in this same quadrant?</p> <p>(1) $xy > 0$ (2) $ax > 0$</p>	GEO	Coordinate Geometry	D	4	
26	<p>If x and y are positive integers such that $x = 8y + 12$, what is the greatest common divisor of x and y?</p> <p>(1) $x = 12u$, where u is an integer. (2) $y = 12z$, where z is an integer.</p>	NP	Divisibility	D	4	

30	<p>If two of the four expressions $x + y$, $x + 5y$, $x - y$, and $5x - y$ are chosen at random, what is the probability that their product will be of the form of $x^2 - (by)^2$, where b is an integer?</p> <p>A) $\frac{1}{2}$</p> <p>B) $\frac{1}{3}$</p> <p>C) $\frac{1}{4}$</p> <p>D) $\frac{1}{5}$</p> <p>E) $\frac{1}{6}$</p>	EIV	Quadratics	P	4	
31	<p>What is the greatest possible area of a triangular region with one vertex at the center of a circle of radius 1 and the other two vertices on the circle?</p> <p>A) $\frac{\sqrt{3}}{4}$</p> <p>B) $\frac{1}{2}$</p> <p>C) $\frac{\pi}{4}$</p> <p>D) 1</p> <p>E) $\sqrt{2}$</p>	GEO	Triangle	P	4	

37	<p>For any positive integer n, the length of n is defined as the number of prime factors whose product is n. For example, the length of 75 is 3, since $75 = (3)(5)(5)$. How many two-digit positive integers have length 6?</p> <p>A) None B) One C) Two D) Three E) Four</p>	NP	Divisibility	P	4	
39	<p>If m and r are two numbers on a number line, what is the value of r?</p> <p>(1) The distance between r and 0 is 3 times the distance between m and 0.</p> <p>(2) 12 is halfway between m and r.</p>	GEO	Lines and Angles	D	4	
40	<p>Sets A, B, and C have some elements in common. If 16 elements are in both A and B, 17 elements are in both A and C, and 18 elements are in both B and C, how many elements do all three of the sets A, B, and C have in common?</p> <p>(1) Of the 16 elements that are in both A and B, 9 elements are also in C.</p> <p>(2) A has 25 elements, B has 30 elements, and C has 35 elements.</p>	WT	Overlapping Sets	D	4	
41	<p>If $\frac{2}{5}$ of the students at College C are business majors, what is the number of female students at College C?</p> <p>(1) $\frac{2}{5}$ of the male students at College C are business majors.</p> <p>(2) 200 of the female students at College C are business majors.</p>	WT	Overlapping sets	D	4	

42	<p>If $zy < xy < 0$, is $x - z + x = z$?</p> <p>(1) $z < x$</p> <p>(2) $y > 0$</p>	NP	Positive / Negative	D	4	
43	<p>$X, 3, 1, 12, 8$</p> <p>If x is an integer, is the median of the 5 numbers shown greater than the average (arithmetic mean) of the 5 numbers?</p> <p>(1) $x > 6$</p> <p>(2) x is greater than the median of the 5 numbers.</p>	WT	Statistics	D	4	
47	<p>In the xy-plane, does the line with equation $y = 3x + 2$ contain the point (r, s)?</p> <p>(1) $(3r + 2 - s)(4r + 9 - s) = 0$</p> <p>(2) $(4r - 6 - s)(3r + 2 - s) = 0$</p>	GEO	Coordinate Geometry	D	4	
52	<p>A committee of three people is to be chosen from four married couples. What is the number of different committees that can be chose if two people who are married to each other cannot both serve on the committee?</p> <p>A) 16 B) 24 C) 26 D) 30 E) 32</p>	WT	Combinatorics	P	4	

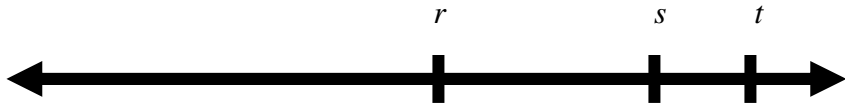
54	<p>Of the 75 houses in a certain community, 48 have a patio. How many of the houses in the community have a swimming pool?</p> <p>(1) 38 of the houses in the community have a patio but do not have a swimming pool.</p> <p>(2) The number of houses in the community that have a patio and a swimming pool is equal to the number of houses in the community that have neither a swimming pool nor a patio.</p>	WT	Overlapping Sets	D	4	
59	<p>Tanya prepared 4 different letters to be sent to 4 different addresses. For each letter, she prepared an envelope with its correct address. If the 4 letters are to be put into the 4 envelopes at random, what is the probability that only 1 letter will be put into the envelope with its correct address?</p> <p>A) $\frac{1}{24}$</p> <p>B) $\frac{1}{8}$</p> <p>C) $\frac{1}{4}$</p> <p>D) $\frac{1}{3}$</p> <p>E) $\frac{3}{8}$</p>	WT	Probability	P	4	
63	<p>Are x and y both positive?</p> <p>(1) $2x - 2y = 1$</p> <p>(2) $\frac{x}{y} > 1$</p>	EIV	Inequalities	D	4	
70	<p>In the xy-plane, what is the y-intercept of line ℓ?</p> <p>(1) The slope of line ℓ is 3 times its y-intercept.</p> <p>(2) The x-intercept of line ℓ is $-\frac{1}{3}$.</p>	GEO	Coordinate Geometry	D	4	

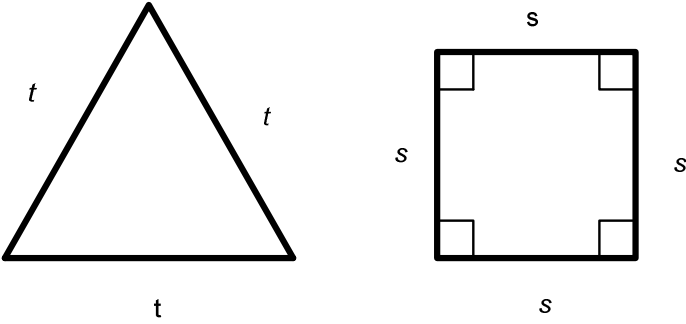
71	<p>Is $m + z > 0$?</p> <p>(1) $m - 3z > 0$</p> <p>(2) $4z - m > 0$</p>	EIV	Inequalities	D	4	
74	<p>Last month 15 homes were sold in Town X. The average (arithmetic mean) sale price of the homes was \$150,000 and the median sale price was \$130,000. Which of the following statements must be true?</p> <p>I. At least one of the homes was sold for more than \$165,000.</p> <p>II. At least one of the homes was sold for more than \$130,000 and less than \$150,000.</p> <p>III. At least one of the homes was sold for less than \$130,000.</p> <p>A) I only B) II only C) III only D) I and II E) I and III</p>	WT	Statistics	P	4	
75	<p>A certain law firm consists of 4 senior partners and 6 junior partners. How many different groups of 3 partners can be formed in which at least one member of the group is a senior partner? (Two groups are considered different if at least one group member is different.)</p> <p>A) 48 B) 100 C) 120 D) 288 E) 600</p>	WT	Combinatorics	P	4	

77	<p>Each employee of Company Z is an employee of either Division X or Division Y, but not both. If each division has some part-time employees, is the ratio of the number of full-time employees to the number of part-time employees greater for Division X than for Company Z?</p> <p>(1) The ratio of the number of full-time employees to the number of part-time employees is less for Division Y than for Company Z.</p> <p>(2) More than half of the full-time employees of Company Z are employees of Division X, and more than half of the part-time employees of Company Z are employees of Division Y.</p>	WT	Weighted Average	D	4	
79	<p>Alice's take-home pay last year was the same each month, and she saved the same fraction of her take-home pay each month. The total amount of money that she had saved at the end of the year was 3 times the amount of that portion of her monthly take-home pay that she did <u>not</u> save. If all the money that she saved last year was from her take-home pay, what fraction of her take-home pay did she save each month?</p> <p>A) $\frac{1}{2}$</p> <p>B) $\frac{1}{3}$</p> <p>C) $\frac{1}{4}$</p> <p>D) $\frac{1}{5}$</p> <p>E) $\frac{1}{6}$</p>	FDP	Fraction WP - SN	P	4	

84	<p>A contractor combined x tons of gravel mixture that contained 10 percent gravel G, by weight, with y tons of a mixture that contained 2 percent gravel G, by weight, to produce z tons of a mixture that was 5 percent gravel G, by weight. What is the value of x?</p> <p>(1) $y = 10$</p> <p>(2) $z = 16$</p>	WT	Weighted Average	D	4	
91	<p>The rate of a certain chemical reaction is directly proportional to the square of the concentration of chemical A present and inversely proportional to the concentration of chemical B present. If the concentration of chemical B is increased by 100 percent, which of the following is closest to the percent change in the concentration of chemical A required to keep the reaction unchanged?</p> <p>A) 100% decrease</p> <p>B) 50% decrease</p> <p>C) 40% decrease</p> <p>D) 40% increase</p> <p>E) 50% increase</p>	EIV	Formulas	P	4	
93	<p>In the xy-plane, at what two points does the graph of $y = (x + a)(x + b)$ intersect the x-axis?</p> <p>(1) $a + b = -1$</p> <p>(2) The graph intersects the y-axis at $(0, -6)$.</p>	GEO	Coordinate Geometry	D	4	
101	<p>For every positive integer n, the function $h_{(n)}$ is defined to be the product of all the even integers from 2 to n, inclusive. If p is the smallest prime factor of $h_{(100)} + 1$, then p is</p> <p>A) between 2 and 10</p> <p>B) between 10 and 20</p> <p>C) between 20 and 30</p> <p>D) between 30 and 40</p> <p>E) greater than 40</p>	NP	Divisibility	P	4	

105	<p>If it took Carlos $\frac{1}{2}$ hour to cycle from his house to the library yesterday, was the distance that he cycled greater than 6 miles?</p> <p>(1) The average speed at which Carlos cycled from his house to the library yesterday was greater than 16 feet per second.</p> <p>(2) The average speed at which Carlos cycled from his house to the library yesterday was less than 18 feet per second.</p>	WT	Rate	D	4	
106	<p>If n and y are positive integers and $450y = n^3$, which of the following must be an integer?</p> <p>I. $\frac{y}{(3)(2^2)(5)}$</p> <p>II. $\frac{y}{(3^2)(2)(5)}$</p> <p>III. $\frac{y}{(3)(2)(5^2)}$</p> <p>A) None B) I only C) II only D) III only E) I, II, and III</p>	NP	Divisibility	P	4	

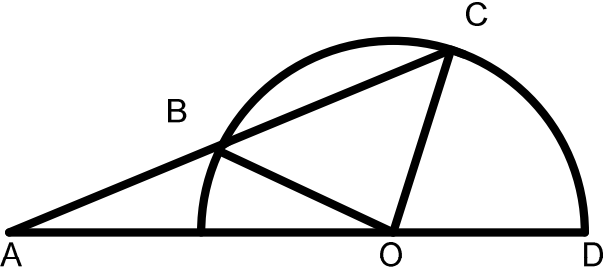
111	<p>A certain city with a population of 132,000 is to be divided into 11 voting districts, and no district is to have a population that is more than 10 percent greater than the population of any other district. What is the minimum possible population that the least populated district could have?</p> <p>A) 10,700 B) 10,800 C) 10,900 D) 11,000 E) 11,100</p>	WT	Statistics	P	4	
115	 <p>On the number line shown, is zero halfway between r and s?</p> <p>(1) s is to the right of zero.</p> <p>(2) The distance between t and r is the same as the distance between t and $-s$.</p>	GEO	Lines and Angles	D	4	
123	<p>In the xy-plane, line l and line k intersect at the point $(4, 3)$. Is the product of their slopes negative?</p> <p>(1) The product of the x-intercepts of lines l and k is positive.</p> <p>(2) The product of the y-intercepts of lines l and k is negative.</p>	GEO	Coordinate Geometry	D	4	

128	 <p>If the two regions above have the same area, what is the ratio $t:s$?</p> <p>A) 2:3</p> <p>B) 16:3</p> <p>C) $4:\sqrt{3}$</p> <p>D) $2:\sqrt[4]{3}$</p> <p>E) $4:\sqrt[4]{3}$</p>	GEO	Triangles	P	4	
135	<p>For manufacturer M, the cost C of producing x units of its product per month is given by $C = kx + t$, where C is in dollars and k and t are constants. Last month, if manufacturer M produced 1,000 units of its product and sold all the units for $k + 60$ dollars each, what was manufacturers M's gross profit on the 1,000 units?</p> <p>(1) Last month, manufacturer M's revenue from the sale of the 1,000 units was \$150,000.</p> <p>(2) Manufacturer M's cost of producing 500 units in a month is \$45,000 less than its cost of producing 1,000 units in a month.</p>	WT	Algebraic Translations	D	4	

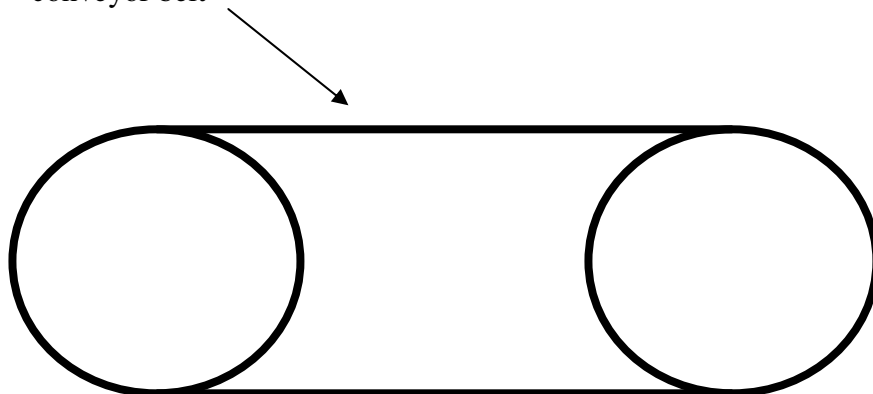
136	<p>On his drive to work, Leo listens to one of three radio stations, A, B, or C. He first turns to A. If A is playing a song he likes, he listens to it; if not, he turns to B. If B is playing a song he likes, he listens to it; if not, he turns to C. If C is playing a song he likes, he listens to it; if not, he turns off the radio. For each station, the probability is 0.30 that at any given moment the station is playing a song Leo likes. On his drive to work, what is the probability that Leo will hear a song he likes?</p> <p>A) 0.027 B) 0.090 C) 0.417 D) 0.657 E) 0.900</p>	WT	Probability	P	4	
141	<p>Each employee on a certain task force is either a manager or a director. What percent of the employees on the task force are directors?</p> <p>(1) The average (arithmetic mean) salary of the managers on the task force is \$5,000 less than the average salary of all employees on the task force.</p> <p>(2) The average (arithmetic mean) salary of the directors on the task force is \$15,000 greater than the average salary of all employees on the task force.</p>	WT	Weighted Average	D	4	

142	<p>Before being simplified, the instructions for computing income tax in country R were to add 2 percent of one's annual income to the average (arithmetic mean) of 100 units of country R's currency and 1 percent of one's annual income. Which of the following represents the simplified formula for computing the income tax, in country R's currency, for a person in that country whose annual income is I?</p> <p>A) $50 + \frac{I}{200}$</p> <p>B) $50 + \frac{3I}{100}$</p> <p>C) $50 + \frac{I}{40}$</p> <p>D) $100 + \frac{I}{50}$</p> <p>E) $100 + \frac{3I}{100}$</p>	FDP	Percent WP	P	4	
143	<p>If $2^x - 2^{x-2} = 3(2^{13})$, what is the value of x?</p> <p>A) 9</p> <p>B) 11</p> <p>C) 13</p> <p>D) 15</p> <p>E) 17</p>	NP	Exponents	P	4	

144	<p>If \$1,000 is deposited in a certain bank account and remains in the account along with any accumulated interest, the dollar amount of interest, I, earned by the deposit in the first n years is given by the formula</p> $I = 1,000 \left(\left(1 + \frac{r}{100} \right)^n - 1 \right),$ <p>where r percent is the annual interest rate paid by the bank. Is the annual interest rate paid by the bank greater than 8 percent?</p> <p>(1) The deposit earns a total of \$210 in interest in the first two years.</p> <p>(2) $\left(1 + \frac{r}{100} \right)^2 > 1.15$</p>	FDP	Compound Interest	D	4	
145	<p>When a certain tree was first planted, it was 4 feet tall, and the height of the tree increased by a constant amount each year for the next 6 years. At the end of the 6th year, the tree was $\frac{1}{5}$ taller than it was at the end of the 4th year. By how many feet did the height of the tree increase each year?</p> <p>A) $\frac{3}{10}$ B) $\frac{2}{5}$ C) $\frac{1}{2}$ D) $\frac{2}{3}$ E) $\frac{6}{5}$</p>	WT	Algebraic Translations	P	4	
149	<p>In the sequence, $a_n = a_{n-1} + k$ where $2 \leq n \leq 15$ and k is a nonzero constant. How many of the terms in the sequence are greater than 10?</p> <p>(1) $a_1 = 24$ (2) $a_8 = 10$</p>	EIV	Sequences	D	4	

155	<p>What is the greatest prime factor of $4^{17} - 2^{28}$?</p> <p>A) 2 B) 3 C) 5 D) 7 E) 11</p>	NP	Exponents	P	4	
167	 <p>In the figure shown, point O is the center of the semicircle and points B, C, and D lie on the semicircle. If the length of line segment AB is equal to the length of line segment OC, what is the degree measure of angle BAO?</p> <p>(1) The degree measure of angle COD is 60.</p> <p>(2) The degree measure of angle BCO is 40.</p>	GEO	Triangles	D	4	

conveyor belt



Note: Figure not drawn to scale.

As shown in the figure above, a thin conveyor belt 15 feet long is drawn tightly around two circular wheels each 1 foot in diameter. What is the distance, in feet, between the centers of the two wheels?

A) $\frac{15 - \pi}{2}$

B) $\frac{5\pi}{4}$

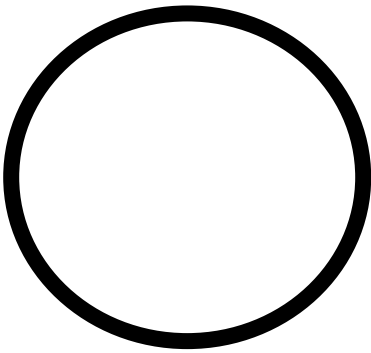
C) $15 - 2\pi$

D) $15 - \pi$

E) 2π

208	$\left(\sqrt{9+\sqrt{80}} + \sqrt{9-\sqrt{80}}\right)^2 =$ <p>A)1</p> <p>B)$9 - 4\sqrt{5}$</p> <p>C)$18 - 4\sqrt{5}$</p> <p>D)18</p> <p>E)20</p>	EIV	Quadratics	P	4	
211	<p>Is $x^4 + y^4 > z^4$?</p> <p>(1) $x^2 + y^2 > z^2$</p> <p>(2) $x + y > z$</p>	EIV	Inequalities	D	4	
214	<p>For one toss of a certain coin, the probability that the outcome is heads is 0.6. If this coin is tossed 5 times, which of the following is the probability that the outcome will be heads <u>at least</u> 4 times?</p> <p>A) $(0.6)^5$</p> <p>B) $2(0.6)^4$</p> <p>C) $3(0.6)^4(0.4)$</p> <p>D) $4(0.6)^4(0.4) + (0.6)^5$</p> <p>E) $5(0.6)^4(0.4) + (0.6)^5$</p>	WT	Probability	P	4	

218	<p>In the infinite sequence $a_1, a_2, a_3, \dots, a_n, \dots$, each term after the first is equal to twice the previous term. If $a_5 - a_2 = 12$, what is the value of a_1?</p> <p>A) 4</p> <p>B) $\frac{24}{7}$</p> <p>C) 2</p> <p>D) $\frac{12}{7}$</p> <p>E) $\frac{6}{7}$</p>	EIV	Sequences	P	4	
220	<p>A certain jar contains only b black marbles, w white marbles, and r red marbles. If one marble is to be chosen at random from the jar, is the probability that the marble chosen will be red greater than the probability that the marble chosen will be white?</p> <p>(1) $\frac{r}{b+w} > \frac{w}{b+r}$</p> <p>(2) $b - w > r$</p>	WT	Probability	D	4	

222	 <p>The figure shows the top side of a circular medallion made of a circular piece of colored glass surrounded by a metal frame, represented by the black region. If the radius of the medallion is r centimeters and the width of the metal frame is s centimeters, then in terms of s and r, what is the area of the metal frame, in square centimeters?</p> <p>A) $\pi(r - s)^2$ B) $\pi(r^2 - s^2)$ C) $2\pi(r - s)$ D) $\pi(2r - s)$ E) $\pi s(2r - s)$</p>	GEO	Circles	P	4	
-----	--	-----	---------	---	---	--

224	<p>In a certain bathtub, both the cold-water and the hot-water fixtures leak. The cold-water leak alone would fill an empty bucket in c hours, and the hot-water leak alone would fill the same bucket in h hours, where $c < h$. If both fixtures began to leak at the same time into the empty bucket at their respective constant rates and consequently it took t hours to fill the bucket, which of the following must be true?</p> <p>I. $0 < t < h$ II. $c < t < h$ III. $\frac{c}{2} < t < \frac{h}{2}$</p> <p>A) I only B) II only C) III only D) I and II E) I and III</p>	WT	Work	P	4	
233	<p>A contest will consist of n questions, each of which is to be answered either "True" or "False". Anyone who answers all n questions correctly will be a winner. What is the least value of n for which the probability is less than $\frac{1}{1,000}$ that a person who randomly guesses the answer to each question will be a winner?</p> <p>A) 5 B) 10 C) 50 D) 100 E) 1,000</p>	WT	Probability	P	4	

234	<p>A certain business produced x rakes each month from November through February and shipped $\frac{x}{2}$ rakes at the beginning of each month from March through October. The business paid no storage costs for the rakes from November through February, but it paid storage costs of \$0.10 per rake each month from March through October from the rakes that had not been shipped. In terms of x, what was the total storage cost, in dollars, that the business paid for the rakes for the 12 months from November through October?</p> <p>A) $0.40x$ B) $1.20x$ C) $1.40x$ D) $1.60x$ E) $3.20x$</p>	EIV	VIC	P	4	
257	<p>If $(5^{21})(4^{11}) = (2)(10^n)$, what is the value of n?</p> <p>A) 11 B) 21 C) 22 D) 23 E) 32</p>	EIV	Exponential Equations	P	4	
275	<p>The temperature of a certain cup of coffee 10 minutes after it was poured was 120 degrees Fahrenheit. If the temperature F of the coffee t minutes after it was poured can be determined by the formula $F = 120(2^{-at}) + 60$, where F is in degrees Fahrenheit and a is a constant, then the temperature of the coffee 30 minutes after it was poured was how many degrees Fahrenheit?</p> <p>A) 65 B) 75 C) 80 D) 85 E) 90</p>	EIV	Formulas	P	4	

277	<p>Each of the numbers w, x, y, and z is equal to either 0 or 1. What is the value of $w + x + y + z$?</p> <p>(1) $\frac{w}{2} + \frac{x}{4} + \frac{y}{8} + \frac{z}{16} = \frac{11}{16}$</p> <p>(2) $\frac{w}{3} + \frac{x}{9} + \frac{y}{27} + \frac{z}{81} = \frac{31}{81}$</p>	EIV	Basic Equations	D	4	
-----	--	-----	-----------------	---	---	--