



MATHS

BOOKS - INDEPENDENTLY PUBLISHED

MATHS (ENGLISH)

PRACTICE TEST 5 - MATHEMATICS TEST

Exercise

1. A marble will be randomly selected from a bag of solid-colored marbles. The probability

of selecting a red marble is $\frac{5}{19}$. The probability of selecting a blue marble is $\frac{4}{19}$.

What is the probability of selecting a red marble or a blue marble?

A. $\frac{1}{19}$

B. $\frac{9}{19}$

C. $\frac{9}{38}$

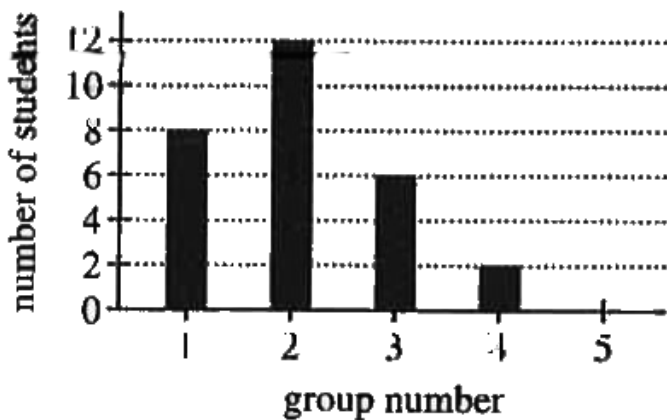
D. $\frac{20}{38}$

Answer: B



Watch Video Solution

2. The graph below shows the number of students who were present on Thursday from each of the 5 groups in Ms. Meagan's class. What is the probability that a student selected at random from the class on Thursday is in Group 4?



A. $\frac{1}{28}$

B. $\frac{1}{14}$

C. $\frac{1}{5}$

D. $\frac{1}{4}$

Answer: B



Watch Video Solution

3. Consider the equation $k = \frac{7}{5}j + 54$. For what value of j is the value of k equal to 40 ?

A. -10

B. $-\frac{98}{5}$

C. $\frac{178}{7}$

D. $\frac{200}{7}$

Answer: A



Watch Video Solution

4. What is $|3 - x|$ when $x = 8$?

A. -11

B. -5

C. 5

D. 8

Answer: C



Watch Video Solution

5. When Tyrese fell asleep one night, the temperature was $24^{\circ}F$. When Tyrese awoke the next morning, the temperature was $-16^{\circ}F$. Letting $+$ denote a rise in

temperature and - denotes a drop in temperature, what was the change in temperature from the time Tyrese fell asleep until the time he awoke?

A. $-40^{\circ} F$

B. $-8^{\circ} F$

C. $+4^{\circ} F$

D. $+8^{\circ} F$

Answer: A



Watch Video Solution

6. Ming purchased a car that had a purchase price of \$5,400, which included all other costs and tax. She paid \$1,000 as a down payment and got a loan for the rest of the purchase price. Ming paid off the loan by making 28 payments of \$200 each. The total of all her payments, including the down payment, was how much more than car's purchase price?

A. \$ 200

B. \$ 1,200

C. \$4,400

D. \$5,600

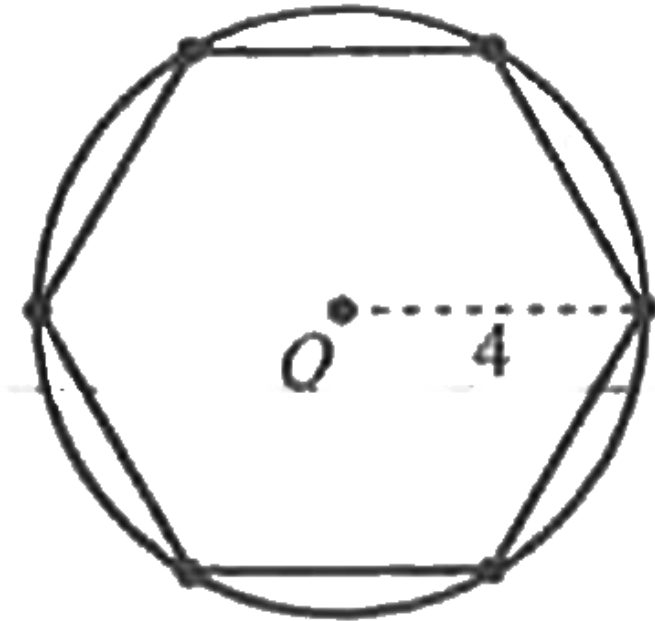
Answer: B



[Watch Video Solution](#)

7. Shown below is a regular hexagon inscribed in a circle whose radius is 4 inches . What is

the perimeter, in inches, of the hexagon?



A. 8π

B. $12\sqrt{3}$

C. 18

D. 24

Answer: D

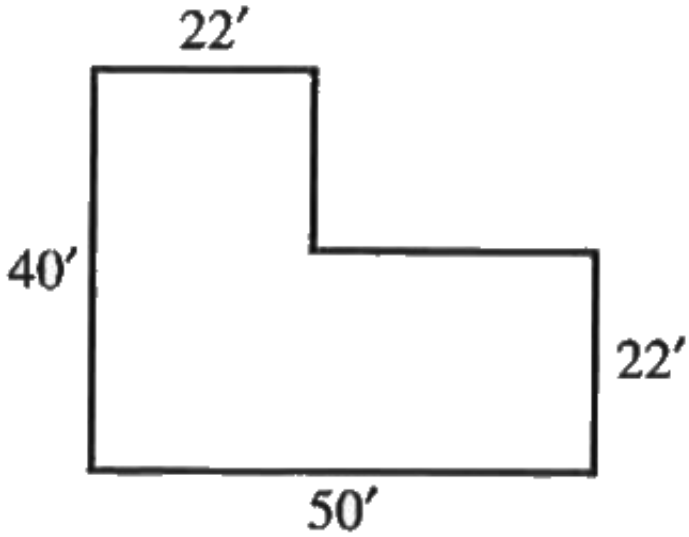


Watch Video Solution

8. The floor plan for an L-shaped storage building is shown below with distances marked in feet. What is the floor area of the building, in square feet?

(Note: Walls in this building meet only at right

angles.)



A. 190

B. 504

C. 1, 232

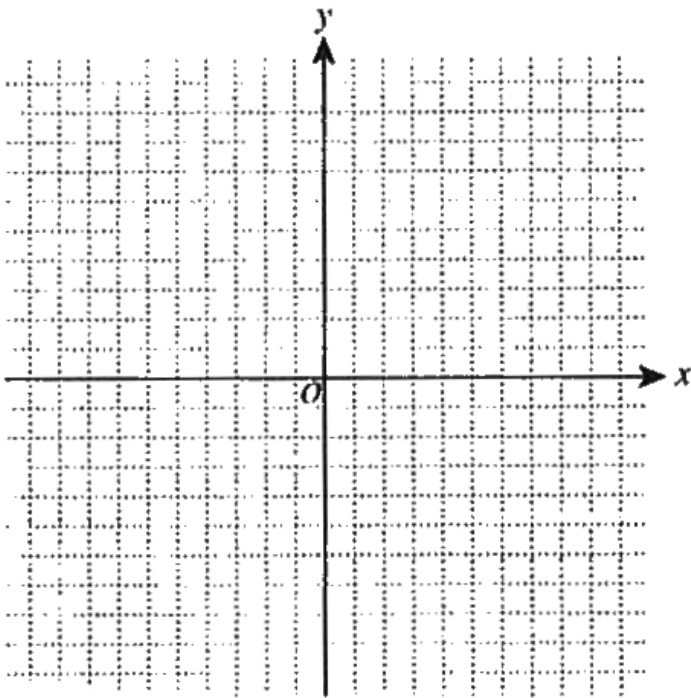
D. 1, 496

Answer: D



Watch Video Solution

9. Quadrilateral ABCD with vertices A $(-2, 0)$, B $(0,4)$, C $(5,5)$, and D $(8,2)$ will be graphed in the standard (x, y) coordinate plane below.



Which of the following is a type of quadrilateral determined by these vertices?

A. Kite

B. Parallelogram

C. Trapezoid

D. Rectangle

Answer: C



Watch Video Solution

10. Given that $f(x) = 3x + 7$ and $g(x) = \frac{x^2}{2}$,

what is the value of $f(g(4))$?

A. 8

B. 19

C. 31

D. 152

Answer: C



Watch Video Solution

11. At her hot dog stand, Julie sells hot dogs for \$2 each. Purchasing hot dogs and other supplies costs \$200 per month. The solution of which of the following inequalities models the numbers of hot dogs, h , Julie can sell per month and make a profit?

A. $h - 200 > 0$

B. $h - 200 < 0$

C. $h + 200 > 0$

D. $2h - 200 > 0$

Answer: D



Watch Video Solution

12. In the standard (x,y) coordinate plane, what is the slope of the line $3x + 8y = 5$?

A. -3

B. $-\frac{3}{8}$

C. $\frac{3}{5}$

D. 3

Answer: B



Watch Video Solution

13. Which of the following (x,y) pairs is the solution for the system of equations

$$x + 2y = 2 \text{ and } -2x + y = 16?$$

A. $(-6, 4)$

B. $(-1, 1, 5)$

C. $(1, 0, 5)$

D. $(0, 1)$

Answer: A



Watch Video Solution

14. On a map, $\frac{1}{4}$ inch represents 16 actual miles. Two towns are $2\frac{3}{4}$ inches apart on this map are how many actual miles apart?

A. 11

B. 16

C. 44

D. 176

Answer: D



Watch Video Solution

15. Which of the following matrices is equal to

$$4 \begin{bmatrix} -1 & 2 \\ 0 & -4 \end{bmatrix} ?$$

A. $[-4 \quad -8]$

B. $\begin{bmatrix} 4 \\ -16 \end{bmatrix}$

C. $\begin{bmatrix} 3 & 6 \\ 4 & 0 \end{bmatrix}$

D. $\begin{bmatrix} -4 & 8 \\ 0 & -16 \end{bmatrix}$

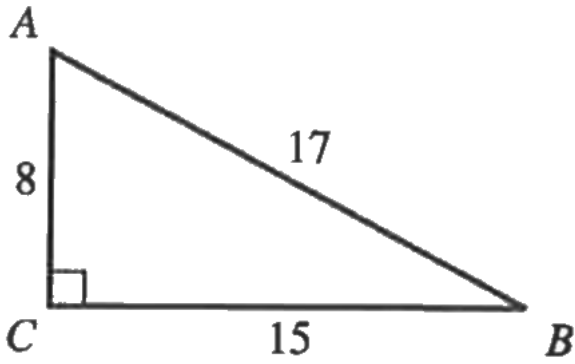
Answer: D



Watch Video Solution

16. What is the value of $\tan A$ in right triangle

$\triangle ABC$ below?



A. $\frac{8}{17}$

B. $\frac{8}{15}$

C. $\frac{15}{17}$

D. $\frac{15}{8}$

Answer: D



Watch Video Solution

17. Tina runs at a rate of 8 miles per hour. At that rate, how many miles will she run in 12 minutes?

A. $\frac{5}{8}$

B. $\frac{2}{3}$

C. $1\frac{1}{2}$

D. $1\frac{3}{5}$

Answer: D



18. A function $f(x)$ is defined as $f(x) = -6x^2$.

What is $f(-3)$?

A. -324

B. -54

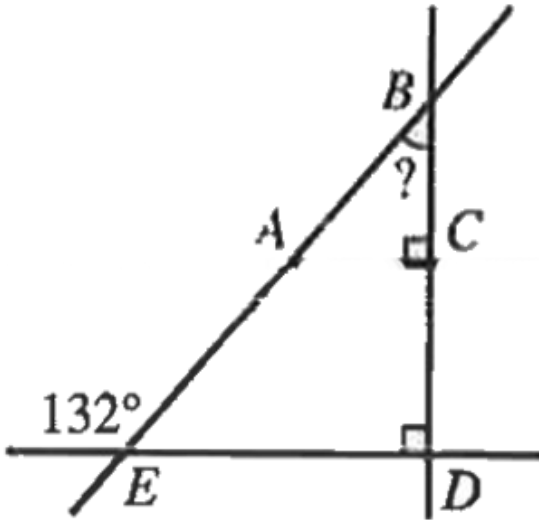
C. 54

D. 108

Answer: B



19. In the figure below, A is on $(BE) \leftrightarrow$ and C is on $(BD) \leftrightarrow$. What is the measure of $\angle ABC$?



A. 24°

B. 42°

C. 45°

D. 48°

Answer: B



Watch Video Solution

20. Marcos programs his calculator to evaluate a linear function, but he doesn't say what the function is. When 5 is entered, the calculator displays the value 2. When 15 is entered, the calculator displays the value 6. Which of the

following expressions explains what the calculator will display when any number, n , is entered?

A. $\frac{2}{5}n$

B. $\frac{5}{2}n$

C. $n - 3$

D. $n - 9$

Answer: A



Watch Video Solution

21. On Friday, the temperature at 8:00 a.m. was $49^{\circ} F$ and rose at a constant rate of $\frac{1}{2}^{\circ} F$ per hour until noon. A cold front passed through at noon, and the temperature then fell at a constant rate of $1^{\circ} F$ per hour. The temperature first fell below $49^{\circ} F$ between:

- A. noon and 1 p.m.
- B. 1 p.m. And 2 p.m.
- C. 2 p.m. And 3 p.m.
- D. 3 p.m. And 4 p.m.

Answer: C



Watch Video Solution

22. Letter grades in Hugo's math class are based on the percent of the total possible points on 4 unit exams (each worth 100 points) and the final exam (worth 200 points) and are assigned according to the chart below.

Range	Course grade
At least 90%	A
80%–89%	B
70%–79%	C
60%–69%	D
Less than 60%	F

The number of points Hugo scored on the unit exams this term were 82, 88, 91 and 83. When course grades were posted, Hugo's course grade was listed as a B. Which of the following could NOT have been the number of points he scored on the final exam?

B. 156

C. 166

D. 196

Answer: D

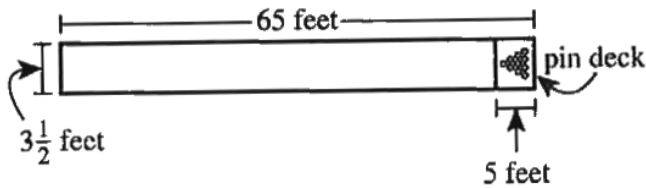


Watch Video Solution

23. Halle is bowling a series of 3 games. She has bowled 2 of 3 games with scores of 148 and 176. The figure below is a top view of the bowling lane. The dimensions for the bowling

lane are given in the figure. The pin deck is the rectangular area within the bowling lane where the bowling pins are set up.

(Note: The figure is not drawn to scale.)



The diameter of each pin at its base is 2.25 in. When all of the pins are set up, which of the following values is closest to the area, in square inches, that is covered by the bases of the pins?

A. 40

B. 71

C. 111

D. 125

Answer: A

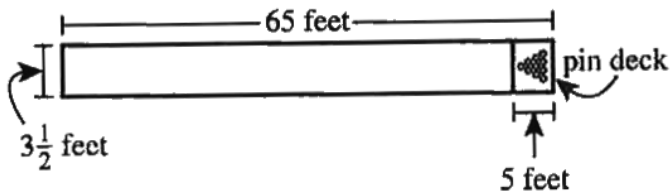


Watch Video Solution

24. Halle is bowling a series of 3 games. She has bowled 2 of 3 games with scores of 148 and 176. The figure below is a top view of the bowling lane. The dimensions for the bowling

lane are given in the figure. The pin deck is the rectangular area within the bowling lane where the bowling pins are set up.

(Note: The figure is not drawn to scale.)



What is the ratio of the total area of the bowling lane to the area of the pin deck?

A. 12:1

B. 13:1

C. 13:12

D. 127: 17

Answer: B

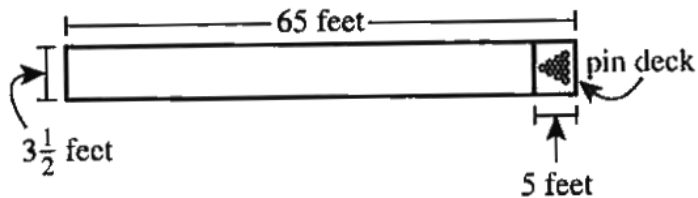


Watch Video Solution

25. Halle is bowling a series of 3 games. She has bowled 2 of 3 games with scores of 148 and 176. The figure below is a top view of the bowling lane. The dimensions for the bowling lane are given in the figure. The pin deck is the rectangular area within the bowling lane

where the bowling pins are set up.

(Note: The figure is not drawn to scale.)



What score will Halle need to earn in her 3rd game to have an average score of 172 for the 3 games?

- A. 165
- B. 172
- C. 182
- D. 192

Answer: D



Watch Video Solution

26. The area of a rectangle is 300 square meters, and its length is 3 times its width. How many meters wide is the rectangle?

A. 10

B. 30

C. 50

D. 100

Answer: A



Watch Video Solution

27. A parallelogram has a perimeter of 96 inches, and 1 of its sides measures 16 inches. If it can be determined. What are the lengths, in inches, of the other 3 sides?

A. 16, 16, 48

B. 16, 24, 24

C. 16, 32, 32

D. 16,40,40

Answer: C



Watch Video Solution

28. Elmhurst Street is a two-way street. In each direction. It has one 12-foot-wide lane for car traffic, one 6-foot-wide bike lane, and one 8-foot-wide parking lane. How many feet wide is Elmhurst Street?

A. 26

B. 38

C. 52

D. 60

Answer: C



Watch Video Solution

29. At Central High Scholl, 4 out of every 10 students ride the bus to and from scholl, and 3 out of every 8 who ride the bus are 2,500

students at Central, how many of the students are freshmen who ride the bus?

A. 375

B. 412

C. 428

D. 561

Answer: A



Watch Video Solution

30. If $90^\circ < \theta < 180^\circ$ and $\sin \theta = \frac{20}{29}$, then

$\cos \theta = ?$

A. $\frac{29}{20}$

B. $\frac{20}{21}$

C. $-\frac{21}{29}$

D. $-\frac{29}{21}$

Answer: C



Watch Video Solution

31. Given $f(x) = \frac{2}{x+1}$, what is(are) the real value(s) of t for which $f(t) = t$?

A. -1 only

B. 2 only

C. -2 and 1 only

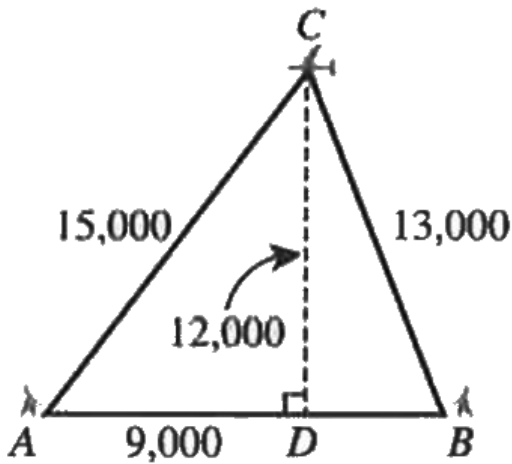
D. -1 and 2 only

Answer: C



Watch Video Solution

32. In the figure below, a highway rest area (at D) and radar stations (at A and B) lie on a level east-west line, A is 9,000 feet due west of D. An airplane (at C) is shown directly above the rest area, flying due west at a constant speed of 300 feet per second and at a constant altitude of 12,000 feet. The airplane is located at a straight-line distance of 15,000 feet from the radar station at A and 13,000 feet from the radar station at B.



Which of the following values is closest to the distance, in feet, between the 2 radar stations?

- A. 5,000
- B. 10,000
- C. 14,500
- D. 15,000

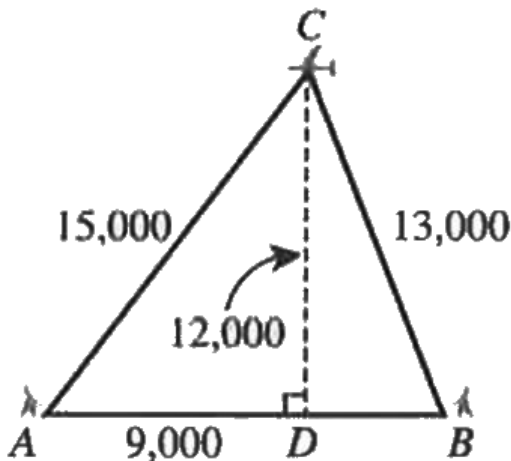
Answer: D



View Text Solution

33. In the figure below, a highway rest area (at D) and radar stations (at A and B) lie on a level east-west line, A is 9,000 feet due west of D. An airplane (at C) is shown directly above the rest area, flying due west at a constant speed of 300 feet per second and at a constant altitude of 12,000 feet. The airplane is located at a straight-line distance of 15,000 feet from the

radar station at A and 13,000 feet from the radar station at B.



Let A, C and D lie in the standard (x,y) coordinate plane such that A is at $(0,0)$ and D is at $(9,000, 0)$. Which of the following equations represents the line along which the airplane is flying?

A. $x = 9,000$

B. $x = 15,000$

C. $y = 12,000$

D. $y = 13,000$

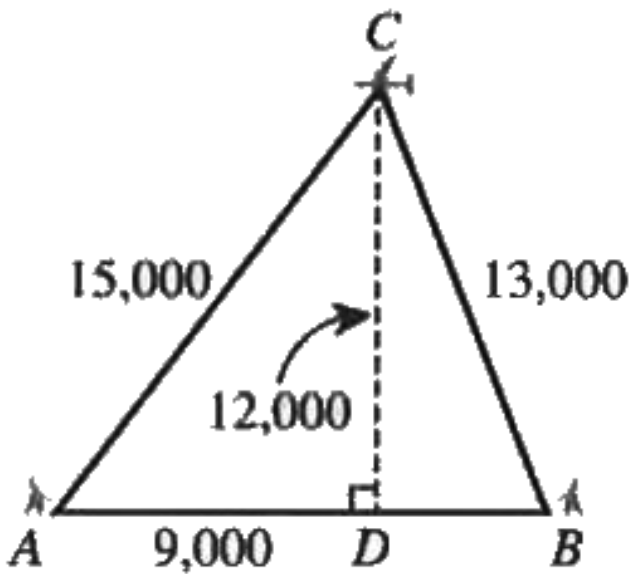
Answer: C



Watch Video Solution

34. In the figure below, a highway rest area (at D) and radar stations (at A and B) lie on a level east-west line, A is 9,000 feet due west of D. An

airplane (at C) is shown directly above the rest area, flying due west at a constant speed of 300 feet per second and at a constant altitude of 12,000 feet. The airplane is located at a straight-line distance of 15,000 feet from the radar station at A and 13,000 feet from the radar station at B.



Which of the following values is closest to the number of seconds it will take for the airplane to fly from C to the point directly above the radar station at A ?

A. 17

B. 30

C. 40

D. 43

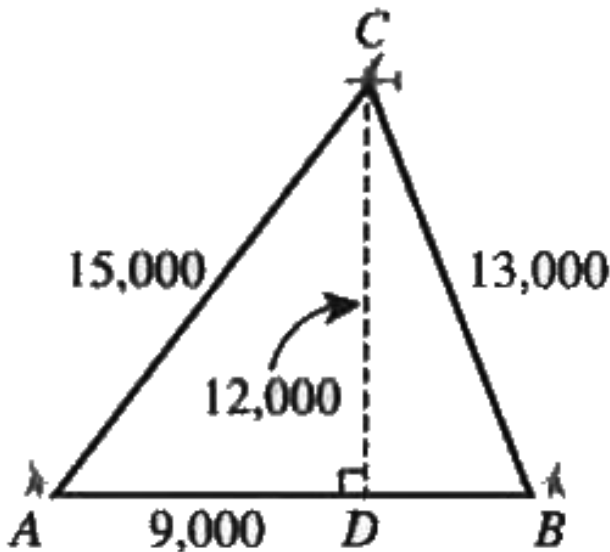
Answer: B



Watch Video Solution

35. In the figure below, a highway rest area (at D) and radar stations (at A and B) lie on a level east-west line, A is 9,000 feet due west of D. An airplane (at C) is shown directly above the rest area, flying due west at a constant speed of

300 feet per second and at a constant altitude of 12,000 feet. The airplane is located at a straight-line distance of 15,000 feet from the radar station at A and 13,000 feet from the radar station at B.



When considering the changing triangle formed by A, B and the moving airplane (C),

which of the angles below increases in measure as the airplane flies due west beyond the point directly above A?

I. $\angle A$

II. $\angle B$

III. $\angle C$.

A. I only

B. II only

C. I and II only

D. I and III only

Answer: A



[View Text Solution](#)

36. Troy made a rectangular poster that is 4 feet long and 2 feet wide. The poster is too large to fit in the available display space, so Troy is going to make a new poster that will have an area that is 50% of the area of the original poster. The length of Troy's new poster will be $\frac{3}{4}$ the length of the original poster. How many feet wide will the new poster be?

A. $\frac{3}{4}$

B. $1\frac{1}{3}$

C. $1\frac{1}{2}$

D. 3

Answer: B



Watch Video Solution

37. What is the solution set of the equation

$$x + 6 = 2(x + 3) - x?$$

A. The empty set (no solution)

B. $\{0\}$

C. $\{2\}$

D. The set of all real numbers

Answer: D



Watch Video Solution

38. Steve plans to use 28 feet of fencing to enclose region of his yard for a pen for his pet

rabbit. What is the area, in square feet, of the largest rectangular region Steve can enclose?

A. 40

B. 45

C. 48

D. 49

Answer: D



Watch Video Solution

39. There are exactly 5 people in a bookstore at 12:00 p.m. Each person earns an annual income that is between \$ 30,000 and \$35,000. No one enters or leaves the bookstore until 12:15 p.m., when a professional athlete with an annual income of more than \$ 1,000,000 enters the bookstore and joins the other 5 people. The mean, median, range and standard deviation of the annual incomes of the 5 people in the bookstore at 12:00 p.m., are calculated and compared to the same 4 statistics of the annual incomes of the 6

people in the bookstore at 12:15 p.m. If it can be determined, which of the 4 statistics changed the least?

A. Range

B. Mean

C. Median

D. Standard deviation

Answer: C



Watch Video Solution

40. Ana and Amy started a landscaping job together. When Ana stopped, she had completed $\frac{2}{5}$ of the job. When Amy stopped, she had completed $\frac{1}{3}$ of the job. Then Ruben complete the rest of the job in 2 hours. Assume that Ana, Amy and Ruben all worked at the same rate. Which of the following values is closest to the number of hours it would have taken 1 of them to complete the entire job alone?

A. 0.37

B. 1.27

C. 2.73

D. 7.50

Answer: D



Watch Video Solution

41. If a and b positive real numbers, which of

the following is equivalent to $\frac{\left(2a^{-1}\sqrt{b}\right)^4}{ab^{-3}}$?

A. $8a^2b^4$

B. $\frac{8b^6}{a^4}$

C. $\frac{16b^5}{a^5}$

D. $\frac{16b^4}{a^5}$

Answer: C



Watch Video Solution

42. To become a contestant on a quiz show, a person must correctly order 4 rock stars by age, from youngest to oldest. The contestant knows which one is the oldest rock star, but

randomly guesses at the order of the other 3 rock stars. What is the probability the contestant will get all 4 in the correct order?

A. $\frac{1}{24}$

B. $\frac{1}{6}$

C. $\frac{1}{4}$

D. $\frac{1}{3}$

Answer: B



Watch Video Solution

43. Which of the following expressions is

equivalent to $\frac{\frac{x}{3} + \frac{1}{2}}{\frac{2}{3} - \frac{1}{4}}$?

A. $\frac{-x - 1}{5}$

B. $\frac{2x + 6}{5}$

C. $\frac{4x + 3}{5}$

D. $\frac{4x + 6}{5}$

Answer: D



Watch Video Solution

44. An automobile license plate number issued by a certain state has 6 character positions. Each of the first 3 positions contains a single digit from 0 through 9. Each of the last 3 positions contains 1 of the 26 letters of the alphabet. Digits and letters of the alphabet can such license plate number can be made?

A. 36

B. 46, 656

C. 1, 000, 000

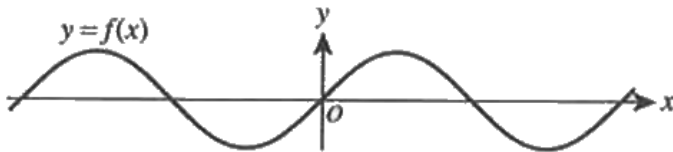
D. 17, 576, 000

Answer: D



Watch Video Solution

45. The function $y = f(x)$ is graphed in the standard (x, y) coordinate plane below.



The points on the graph of the function $y = 3 + f(x - 1)$ can be obtained from the points on $y = f(x)$ by a shift of:

- A. 1 unit to the right and 3 unit up.
- B. 1 unit to the right and 3 unit down.
- C. 3 unit to the right and 1 unit up.
- D. 3 unit to the right and 1 unit down.

Answer: A



Watch Video Solution

46. When $\log_5 x = -2$, what is x ?

A. -32

B. -25

C. -10

D. $\frac{1}{25}$

Answer: D



Watch Video Solution

47. Which of the following lists those integer value of D for which the fraction $\frac{2}{D}$ lies between $\frac{1}{5}$ and $\frac{1}{3}$?

A. 4 only

B. 3,4 and 5

C. 8 only

D. 7, 8, and 9

Answer: D



Watch Video Solution

48. For all real number a , b and c such that $a > b$ and $c < 0$. Which of the following inequalities must be true?

A. $\frac{a}{c} < \frac{b}{c}$

B. $\frac{a}{c} > \frac{b}{c}$

C. $ac > bc$

D. $a + c < b + c$

Answer: A



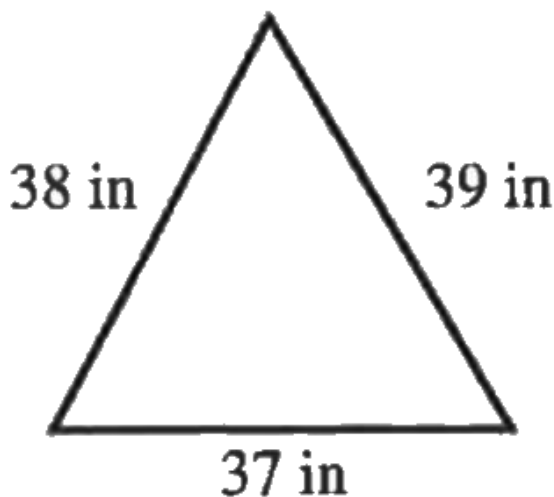
Watch Video Solution

49. The triangle shown below has side lengths 37, 38 and 39 inches. Which of the following expressions gives the measure of the largest

angle of the triangle?

(Note : For every triangle with sides of length a , b and c that are opposite $\angle A$, $\angle B$, and $\angle C$, respectively.

$$c^2 = a^2 + b^2 - 2ab \cos C.)$$



$$\text{A. } \cos^{-1} \left(- \frac{37^2 - 38^2 - 39^2}{2(38)(39)} \right)$$

$$\text{B. } \cos^{-1} \left(- \frac{39^2 - 37^2 - 38^2}{2(37)(38)} \right)$$

$$\text{C. } \cos^{-1} (37^2 - 38^2 - 39^2 + 2(38)(39))$$

$$\text{D. } \cos^{-1} (38^2 - 37^2 - 39^2 + 2(37)(39))$$

Answer: B



Watch Video Solution

50. Pete has an average score exactly x points on 4 equally weighted tests. How many points higher than x must Pete score on the 5th

equally weighted test to raise his average score after the 5th test to $x + 2$ points?

A. 2

B. 4

C. 5

D. 10

Answer: D



Watch Video Solution

51. The intersection of lines l and m forms the 4 angles $\angle A$, $\angle B$, $\angle C$, and $\angle D$. The measure of $\angle B$ is $3\frac{1}{2}$ times the measure of $\angle A$. Which of the following values is closest to the measure of $\angle A$?

A. 20°

B. 26°

C. 35°

D. 40°

Answer: D



Watch Video Solution

52. A sequence is defined for all positive integers by $s_n = 2s_{n-1} + n + 1$ and $s_1 = 3$.

What is s_4 ?

A. 9

B. 18

C. 22

D. 49

Answer: D



Watch Video Solution

53. If a is an integer less than -1 . Which of the following orders the expressions $|a|$, $-a^2$, and $-\frac{1}{a}$ from least value to greatest value?

A. $-\frac{1}{a} < -a^2 < |a|$

B. $-\frac{1}{a} < |a| < -a^2$

C. $|a| < -\frac{1}{a} < -a^2$

D. $-a^2 < -\frac{1}{a} < |a|$

Answer: D



Watch Video Solution

54. At the school carnival, Ann is playing a game involving a stack of 10 index cards. Each card has a single number written on it: 1 card has a 1, 2 cards have a 2, 3 cards have a 3, and 4 cards have a 4. Ann will choose 1 card at random, and she will be awarded the number of points equal to the number written on the card. Let the random variable X represent the

number of points Ann receives on any 1 draw.

What is the expected value of X ?

A. 0.4

B. 1

C. 2.5

D. 3

Answer: D



Watch Video Solution

55. Which of the following is equivalent to the sum of any 3 consecutive odd integers, x , y , and z , such that $x < y < z$?

A. $3z$

B. $3y$

C. $3x$

D. $3x + 2$

Answer: B



Watch Video Solution

56. The mean of the set of 5 numbers $\{42, 3, 11, 27, x\}$ is 24, and the median of the set of 4 numbers $\{53, 8, 29, y\}$ is 38. If it can be determined, which of the following values is equal to $x - y$?

A. -38

B. -10

C. 10

D. 38

Answer: B



Watch Video Solution

57. Consider all rectangles such that the rectangle's length is greater than the rectangle's width and the length and width are whole numbers of inches. Which of the following perimeters, in inches, is NOT possible for such a rectangle with an area of 144 square inches?

A. 48

B. 60

C. 80

D. 102

Answer: A



Watch Video Solution

58. The equation $(x - 7)^2 + (y - 8)^2 = 10$ is that of a circle that lies in the standard (x,y) coordinate plane. One endpoint of a diameter of the circle has y -coordinate 11. What is the y -

coordinate of the other endpoint of that diameter?

A. 1

B. 3

C. 4

D. 5

Answer: D



Watch Video Solution

59. The plans for a diving pool call for a rectangular prism that has a length of 30 meters, a width of 25 meters, and a depth of 5 meters. If the plans are changed to increase both the length and the width of the pool by 10%, what will be the increase, to the nearest 1%, in the volume of the pool?

A. 0.1

B. 0.17

C. 0.2

D. 0.21

Answer: D



Watch Video Solution

60. One solutions of the euqation $4x^3 - 2x^2 + x + 7 = 0$ is $x = -1$. Which of the following describes the other 2 solutions?

A. Both are negative real numbers

B. One is a negative real number, and the other is a positive real number.

C. Both are positive real number.

D. Both are complex numbers that are not real.

Answer: D



View Text Solution