



Choose the correct answer: (2 marks for each right answer)

- Between which numbers the positive solution of $x^2 = 20$ lies?
A. 4 and 5 B. 5 and 6 C. 6 and 7 D. 7 and 8
- Which expression represents the rationalization of the denominator of $\frac{4}{3\sqrt{2}}$?
A. $\frac{\sqrt{2}}{3}$ B. $2\sqrt{2}$ C. $\frac{2\sqrt{2}}{3}$ D. $\frac{3\sqrt{2}}{2}$
- What is the simplest form of the expression $4\sqrt{12} + \sqrt{75}$?
A. $11\sqrt{3}$ B. $13\sqrt{3}$ C. $11\sqrt{5}$ D. $13\sqrt{5}$
- For what values of x the value of $\sqrt{x-19}$ is a real number?
A. $x \geq -19$ B. $x \leq -19$ C. $x \geq 19$ D. $x \leq 19$
- What is the simplest form of $\sqrt{3} \times \sqrt{15}$?
A. $3\sqrt{5}$ B. $5\sqrt{3}$ C. 45 D. $3\sqrt{15}$
- Which number is not a solution of $\frac{2}{3}x \geq -\frac{1}{2}$?
A. $-\frac{1}{2}$ B. $\frac{1}{2}$ C. $-\frac{1}{4}$ D. -1
- What is the Solution of the inequality $6x + 4 > 5x - 2$?
A. $x > -4$ B. $x > -6$ C. $x > 6$ D. $x > 4$
- Which name does not apply to the number 7?
A. Natural B. Rational C. Integer D. Irrational
- What is the solution of the equation $2|y| + 7 = 3$?
A. -3 and 7 B. -4 and 4 C. -4 and 2 D. No solution
- What is the solution of the inequality $|2 - y| < 2$?
A. $-2 < y < 2$ B. $0 < y < 4$ C. $-4 < y < 0$ D. $-2 < y < 0$
- Simplify $\left(\frac{2}{5}\right)^{-3}$?
A. $\frac{8}{125}$ B. $-\frac{8}{125}$ C. $\frac{125}{8}$ D. $-\frac{125}{8}$
- Simplify $(x^2y^3)^4$?
A. x^2y^3 B. x^8y^{12} C. x^6y^7 D. x^2y
- Simplify $(x-5)^2$?
A. $x^2 - 10x - 25$ B. $x^2 + 10x + 25$ C. $x^2 - 10x + 25$ D. $x^2 - 25$
- Which of the following represents the complete factorization of the expression: $n(y+4) - 5(y+4)$?
A. $(y-4)(5n+4)$ B. $(y+4)(n+5)$ C. $(y+4)(n-5)$ D. $(y-4)(n+5)$

- Find the missing term in the factorization: $15x - 25x^2 = 5x(3 - \square)$
A. $5x$ B. $-5x$ C. $-5x^2$ D. $5x^2$
- Which expression is equivalent to $25x^2 - 20x + 4$?
A. $(5x+2)^2$ B. $(x+2)^2$ C. $(x-2)^2$ D. $(5x-2)^2$
- Factor $1 - 4x^2$
A. $(1+x)(1-x)$ B. $(1-2x)(1+x)$ C. $(1-2x)(1+2x)$ D. $(1-x)(1+2x)$
- What is the solution of the equation $2x(x+2) = 0$?
A. 0 and 2 B. 0 and -2 C. 2 and 2 D. -2 and 2
- The length of the side of a square is x meters and the area of this square is $169m^2$. Find x .
A. $12m$ B. $14m$ C. $13m$ D. $11m$
- What is the solution of the equation $x^2 - 8x = 9$?
A. -1 and 9 B. 1 and -9 C. 1 and 9 D. -1 and -9
- Which of the following is a non-linear equation?
A. $y = -7$ B. $y = 4x - 3$ C. $x = 2$ D. $y = x^3 + 6$
- Find the slope of the line that passes through each pair of points (2, 6) and (0, 2).
A. 2 B. -4 C. -2 D. 4
- What is the y-intercept of the line $5x - 10y = 30$?
A. (6, 0) B. $(0, \frac{1}{2})$ C. (0, -3) D. (0, -6)
- What is the slope of the line $6x - 2y = -21$?
A. -3 B. -6 C. 6 D. 3
- What is the equation in slope - intercept form of the line that passes through points (1, 6) and (-1, -2)?
A. $y = 2x + 4$ B. $y = -3x + 6$ C. $y = 4x - 2$ D. $y = 4x + 2$
- Which of the following points does the line with the equation $y - 2 = -3(x + 6)$ pass through?
A. (-6, -2) B. (-6, 2) C. (6, -2) D. (6, 2)
- Which of the following equations represents a direct variation between x and y ?
A. $y = \frac{3}{x}$ B. $y = 4x$ C. $y = 3x^2$ D. $y = 4 + x$
- Which line is perpendicular to the line $y = \frac{2}{3}x - 4$?
A. $y = \frac{3}{2}x - 4$ B. $Y = -\frac{2}{3}x - 4$ C. $Y = \frac{2}{3}x - 4$ D. $y = -\frac{3}{2}x - 8$

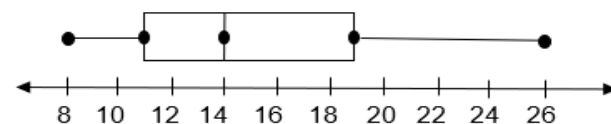
29. What is the solution of the system $\begin{cases} y = -2x + 5 \\ y = x - 4 \end{cases}$
- A. (3, -1) B. (-3, -1)
C. (-1, -3) D. (-1, 3)

30. Which measure of central tendency has the smallest value for the data set: 11, 11, 4, 15, 18, 22, 24, 7

A. Median B. Mean C. Mode D. All are equal

31. Find the first quartile for the data set shown in the box-and-whisker plot

A. 11 B. 19 C. 14 D. 46



32. Sarah has taken three tests worth 100 points each. Her scores are 60, 90, and 86. She has one test left to take. What score must she get on her last test to get an average of 80
- A. 82 B. 84 C. 80 D. 86

33. is used to show how two related sets of data change over time

A. double-line graph B. Double bar graph
C. Frequency table D. Histogram

34. What is the relationship (correlation) between the age of a house and the number of people living in the house

A. A negative correlation B. A positive correlation
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35. A sports announcer states that a Basil has an 84% chance of winning a race. Give the probability, as a fraction in lowest terms, that Basil will NOT win the race

A. 0.16 B. 84 C. 0.84 D. 16

36. A marble is randomly drawn out of a bag and then replaced. The table shows the results after 25 draws. Estimate the probability of drawing a yellow marble.

A. 0.8 B. 0.32
C. 0.34 D. 0.4

Outcome	Red	Blue	Yellow	Green
Draws	6	7	8	4

37. After rolling two fair number cubes, find the probability of getting a total sum of 10

A. $\frac{1}{12}$ B. $\frac{1}{6}$ C. $\frac{3}{10}$ D. $\frac{1}{9}$

38. A bag contains 5 blue balls and 8 green balls. How many yellow balls should be added so that the probability of drawing a green ball is $\frac{2}{5}$

A. 13 B. 8 C. 5 D. 7

39. An experiment consists of tossing 2 fair coins, A and B. Find the probability that both coins will land the same way

A. $\frac{1}{8}$ B. $\frac{1}{2}$ C. $\frac{1}{4}$ D. $\frac{3}{4}$

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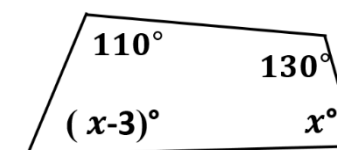
A. Independent B. Dependent
C. Mutually exclusive D. All answers are incorrect

41. Find the measure of each exterior angle of a regular octagon.

A. 30° B. 36° C. 45° D. 60°

42. Find the value of x shown in the figure.

A. 55.5° B. 61.5°
C. 60° D. 75°

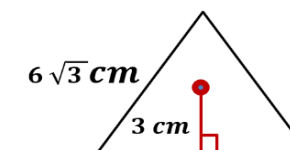


43. Find the perimeter of a regular 7-gon with side length 8 cm

A. 64 cm B. 54 cm C. 56 cm D. 49 cm

44. What is the area of the regular triangle shown opposite?

A. $27\sqrt{3} \text{ cm}^2$ B. $21\sqrt{3} \text{ cm}^2$
C. $18\sqrt{3} \text{ cm}^2$ D. $9\sqrt{3} \text{ cm}^2$



45. Which of the given lengths are the lengths of the sides of a triangle?

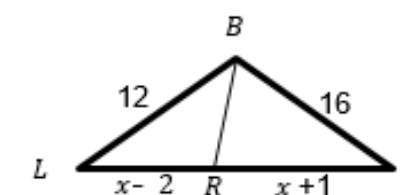
A. 3, 4, 7 B. 3, 4, 6 C. 2, 3, 6 D. 3, 3, 6

46. If 6, 8, 12 and 15, 20, x are the lengths of the corresponding sides of two similar triangles, what is the value of x

A. 6 B. 18 C. 24 D. 30

47. Find the length of $\overline{LR}$ in the figure shown.

A. 12 B. 11
C. 9 D. 16



48. If the similarity ratio of two triangles is $\frac{b}{c}$, then the ratio of their perimeters is

A. $\frac{b}{c^2}$ B. $(\frac{b}{c})^2$ C. $\frac{c}{b}$ D. $\frac{b}{c}$

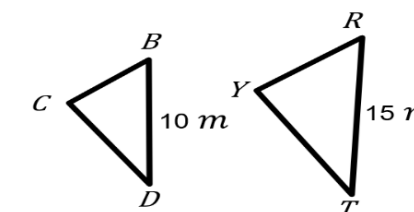
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what is the area of $\triangle RYT$

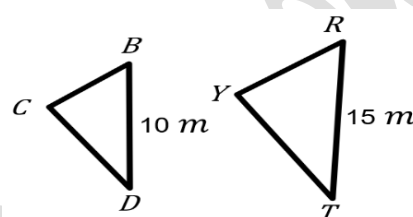
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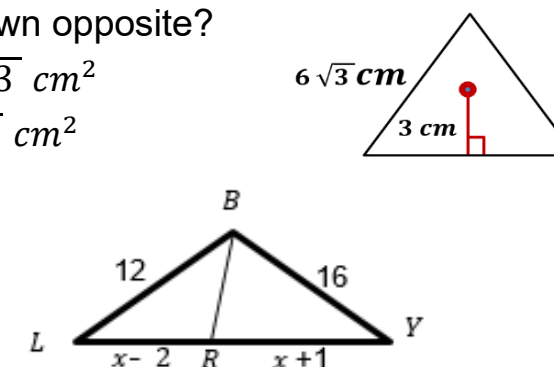


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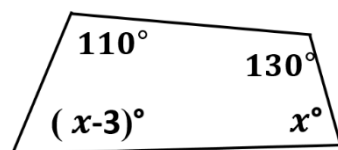
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Time: 2:30 hours

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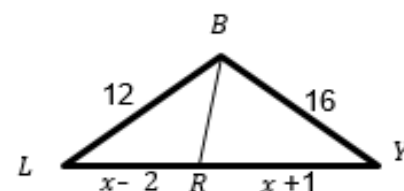
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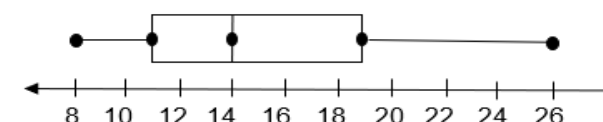
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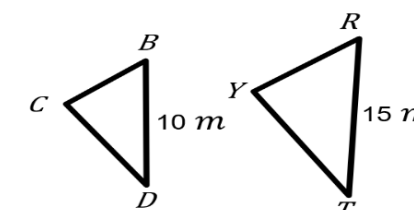
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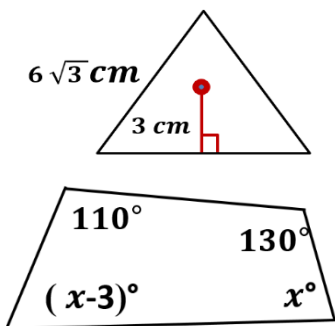
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- A. $(6,-4)$ B. $(3,-2)$ C. $(4,2)$ D. $(-5,1)$
30. A sports announcer states that a Basil has an 84% chance of winning a race. Give the probability, as a fraction in lowest terms, that Basil will NOT win the race
- A. 0.16 B. 84 C. 0.84 D. 16
31. Which expression is equivalent to $25x^2 - 20x + 4$
- A. $(5x+2)^2$ B. $(x+2)^2$ C. $(x-2)^2$ D. $(5x-2)^2$
32. A marble is randomly drawn out of a bag and then replaced. The table shows the results after 25 draws. Estimate the probability of drawing a yellow marble.
- | Outcome | Red | Blue | Yellow | Green |
|---------|-----|------|--------|-------|
| Draws | 6 | 7 | 8 | 4 |
- A. 0.8 B. 0.32
C. 0.34 D. 0.4
33. Find the perimeter of a regular 7-gon with side length 8 cm
- A. 64 cm B. 54 cm C. 56 cm D. 49 cm
34. Simplify $(x-5)^2$
- A. $x^2 - 10x - 25$ B. $x^2 + 10x + 25$
C. $x^2 - 10x + 25$ D. $x^2 - 25$
35. Which of the following points does the line with the equation $y - 2 = -3(x + 6)$ pass through?
- A. $(-6, -2)$ B. $(-6, 2)$
C. $(6, -2)$ D. $(6, 2)$
36. Which name does not apply to the number 7
- A. Natural B. Rational C. Integer D. Irrational
37. Which line is perpendicular to the line $y = \frac{2}{3}x - 4$
- A. $y = \frac{3}{2}x - 4$ B. $Y = -\frac{2}{3}x - 4$
C. $Y = \frac{2}{3}x - 4$ D. $y = -\frac{3}{2}x - 8$
38. What is the solution of the inequality $|2 - y| < 2$
- A. $-2 < y < 2$ B. $0 < y < 4$ C. $-4 < y < 0$ D. $-2 < y < 0$
39. What is the solution of the system $\begin{cases} y = -2x + 5 \\ y = x - 4 \end{cases}$
- A. $(3, -1)$ B. $(-3, -1)$
C. $(-1, -3)$ D. $(-1, 3)$



40. What is the Solution of the inequality $6x + 4 > 5x - 2$
- A. $x > -4$ B. $x > -6$ C. $x > 6$ D. $x > 4$
41. Which of the following equations represents a direct variation between x and y
- A. $y = \frac{3}{x}$ B. $y = 4x$ C. $y = 3x^2$ D. $y = 4 + x$
42. What is the solution of the equation $2|y| + 7 = 3$
- A. -3 and 7 B. -4 and 4 C. -4 and 2 D. No solution
43. Which number is not a solution of $\frac{2}{3}x \geq -\frac{1}{2}$
- A. $-\frac{1}{2}$ B. $\frac{1}{2}$ C. $-\frac{1}{4}$ D. -1
44. Sarah has taken three tests worth 100 points each. Her scores are 60, 90, and 86. She has one test left to take. What score must she get on her last test to get an average of 80
- A. 82 B. 84 C. 80 D. 86
45. Find the slope of the line that passes through each pair of points $(2, 6)$ and $(0, 2)$
- A. 2 B. -4 C. -2 D. 4
46. What is the equation in slope-intercept form of the line that passes through points $(1, 6)$ and $(-1, -2)$
- A. $y = 2x + 4$ B. $y = -3x + 6$
C. $y = 4x - 2$ D. $y = 4x + 2$
47. Find the missing term in the factorization: $15x - 25x^2 = 5x(3 - \square)$
- A. $5x$ B. $-5x$ C. $-5x^2$ D. $5x^2$
48. The length of the side of a square is x meters and the area of this square is 169 m^2 . Find x
- A. 12m B. 14m C. 13m D. 11m
49. What is the solution of the equation $x^2 - 8x = 9$
- A. -1 and 9 B. 1 and -9 C. 1 and 9 D. -1 and -9
50. Which expression represents the rationalization of the denominator of $\frac{4}{3\sqrt{2}}$
- A. $\frac{\sqrt{2}}{3}$ B. $2\sqrt{2}$ C. $\frac{2\sqrt{2}}{3}$ D. $\frac{3\sqrt{2}}{2}$



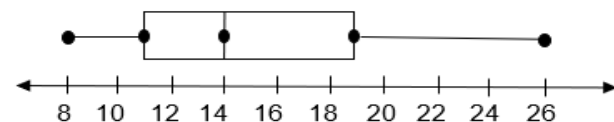
Choose the correct answer:

(2 marks for each right answer)

1. Find the first quartile for the data

set shown in the box-and-whisker plot

A.11 B. 19 C.14 D.46



2. What is the y-intercept of the line $5x - 10y = 30$

A. (6 , 0) B. (0 , $\frac{1}{2}$) C. (0 , -3) D. (0 , -6)

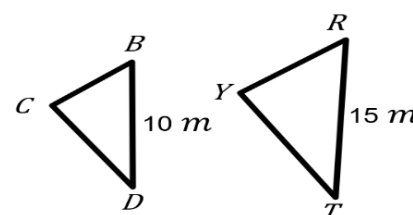
3. After rolling two fair number cubes, find the probability of getting a total sun of 10

A. $\frac{1}{12}$ B. $\frac{1}{6}$ C. $\frac{3}{10}$ D. $\frac{1}{9}$

4. $\triangle BCD \sim \triangle RYT$ and the area of $\triangle BCD$ is $24m^2$.

what is the area of $\triangle RYT$

A. $54 m^2$ B. $36 m^2$
C. $29 m^2$ D. $16 m^2$



5. What is the solution of the equation $2|y| + 7 = 3$

A. -3 and 7 B. -4 and 4 C. -4 and 2 D. No solution

6. What is the simplest form of the expression $4\sqrt{12} + \sqrt{75}$

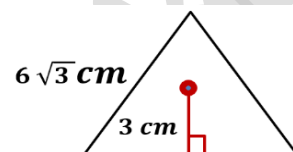
A. $11\sqrt{3}$ B. $13\sqrt{3}$ C. $11\sqrt{5}$ D. $13\sqrt{5}$

7. What is the slope of the line $6x - 2y = -21$

A. -3 B. -6 C. 6 D. 3

8. What is the area of the regular triangle shown opposite?

A. $27\sqrt{3} cm^2$ B. $21\sqrt{3} cm^2$
C. $18\sqrt{3} cm^2$ D. $9\sqrt{3} cm^2$



9. Which of the following represents the complete factorization of the expression: $n(y+4) - 5(y+4)$

A. $(y-4)(5n+4)$ B. $(y+4)(n+5)$
C. $(y+4)(n-5)$ D. $(y-4)(n+5)$

10. What is the relationship (correlation) between the age of a house and the number of people living in the house

A. A negative correlation B. A positive correlation
C. Scatterplot D. No correlation

11. Find the missing term in the factorization: $15x - 25x^2 = 5x(3 - \square)$

A. $5x$ B. $-5x$ C. $-5x^2$ D. $5x^2$

12. Between which numbers the positive solution of $x^2 = 20$ lies?

A. 4 and 5 B. 5 and 6 C. 6 and 7 D. 7 and 8

13. Sarah has taken three tests worth 100 points each. Her scores are 60,90,and 86 she has one test left to take. What score must she get on her last test to get an average of 80 A.82 B. 84 C.80 D.86

14. What is the solution of the equation $2x(x+2) = 0$?

A. 0 and 2 B. 0 and -2 C. 2 and 2 D. -2 and 2

15. An experiment consists of tossing 2 fair coins, A and B. Find the probability that both coins will land the same way

A. $\frac{1}{8}$ B. $\frac{1}{2}$ C. $\frac{1}{4}$ D. $\frac{3}{4}$

16. For what values of x the value of $\sqrt{x-19}$ is a real number ?

A. $x \geq -19$ B. $x \leq -19$ C. $x \geq 19$ D. $x \leq 19$

17. What is the solution of the equation $x^2 - 8x = 9$

A. -1 and 9 B. 1 and -9 C. 1 and 9 D. -1 and -9

18. Which of the given lengths are the lengths of the sides a triangle ?

A. 3 , 4 , 7 B. 3 , 4 , 6 C. 2 , 3 , 6 D. 3 , 3 , 6

19. Which expression represents the rationalization of the denominator of $\frac{4}{3\sqrt{2}}$

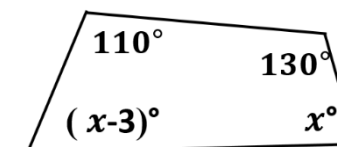
A. $\frac{\sqrt{2}}{3}$ B. $2\sqrt{2}$ C. $\frac{2\sqrt{2}}{3}$ D. $\frac{3\sqrt{2}}{2}$

20. Simplify $(x^2y^3)^4$

A. x^2y^3 B. x^8y^{12} C. x^6y^7 D. x^2y

21. Find the value of x shown in the figure .

A. 55.5° B. 61.5°
C. 60° D. 75°



22. is used to two show how two related sets of data change over time

A. double -line graph B. Double bar graph
C. Frequency table D. Histogram

23. Which of the following points does the line with the equation $y - 2 = -3(x + 6)$ pass through ?

A. (-6 , -2) B. (-6 , 2)
C. (6 , -2) D. (6 , 2)

24. Factor $1 - 4x^2$

A. $(1+x)(1-x)$ B. $(1-2x)(1+x)$
C. $(1-2x)(1+2x)$ D. $(1-x)(1+2x)$

25. The length of the side of a square is x meters and the area of this square is $169 m^2$ Find x

A. $12m$ B. $14 m$ C. $13 m$ D. $11m$

26. What is the solution of the inequality $|2 - y| < 2$

A. $-2 < y < 2$ B. $0 < y < 4$ C. $-4 < y < 0$ D. $-2 < y < 0$

27. Which number is not a solution of $\frac{2}{3}x \geq -\frac{1}{2}$

A. $-\frac{1}{2}$ B. $\frac{1}{2}$ C. $-\frac{1}{4}$ D. -1

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Give the probability, as a fraction in lowest terms, that Basil will NOT win the race
A.0.16 B.84 C.0.84 D.16

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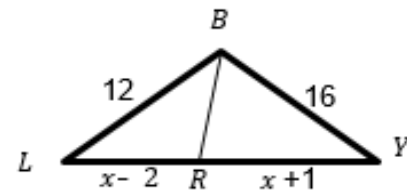
30. Which measure of central tendency has the smallest value
for the data set: 11, 11, 4, 15, 18, 22, 24, 7
A. Median B. Mean C. Mode D. All are equal

31. If 6, 8, 12 and 15, 20, x are the lengths of the corresponding sides of two similar triangles, what is the value of x
A.6 B. 18 C.24 D.30

32. A bag contains 5 blue balls and 8 green balls. How many yellow balls
should be added so that the probability of drawing a green ball is $\frac{2}{5}$
A.13 B.8 C.5 D.7

33. Which of the following equations represents a direct variation between x and y
A. $y = \frac{3}{x}$ B. $y = 4x$ C. $y = 3x^2$ D. $y = 4 + x$

34. Find the length of $\overline{LR}$ in the figure shown .
A.12 B. 11
C.9 D.16



35. Which of the following is a non-linear equation ?

- A. $y = -7$ B. $y = 4x - 3$
C. $x = 2$ D. $y = x^3 + 6$

36. What is the solution of the system $\begin{cases} y = -2x + 5 \\ y = x - 4 \end{cases}$

- A. (3, -1) B. (-3, -1)
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- A.0.8 B. 0.32
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Outcome	Red	Blue	Yellow	Green
Draws	6	7	8	4

39. Rolling 2 fair number cubes and getting both a 1 and a 6 are two events
A.Independent B. Dependent
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40. What is the equation in slope – intercept form of the line that passes through points (1,6) and (-1,-2)
A. $y = 2x + 4$ B. $y = -3x + 6$
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A.64 cm B. 54 cm C. 56 cm D. 49 cm

43. What is the simplest form of $\sqrt{3} \times \sqrt{15}$
A. $3\sqrt{5}$ B. $5\sqrt{3}$ C. 45 D. $3\sqrt{15}$

44. If the similarity ratio of two triangles is $\frac{b}{c}$, then the ratio of their perimeters is
A. $\frac{b}{c^2}$ B. $(\frac{b}{c})^2$ C. $\frac{c}{b}$ D. $\frac{b}{c}$

45. Simplify $(\frac{2}{5})^{-3}$
A. $\frac{8}{125}$ B. $-\frac{8}{125}$ C. $\frac{125}{8}$ D. $-\frac{125}{8}$

46. Find the measure of each exterior angle of a regular octagon .
A. 30° B. 36° C. 45° D. 60°

47. Simplify $(x - 5)^2$
A. $x^2 - 10x - 25$ B. $x^2 + 10x + 25$
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48. Find the coordinate of the midpoint of $\overline{BC}$ if where B (4,-5) and C (2, 1)
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50. Which name does not apply to the number 7
A. Natural B. Rational C. Integer D. Irrational



Choose the correct answer: (2 marks for each right answer)

1. If 6, 8, 12 and 15, 20, x are the lengths of the corresponding sides of two similar triangles, what is the value of x

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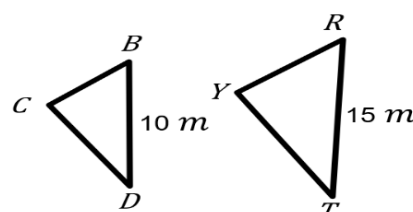
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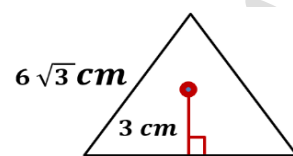
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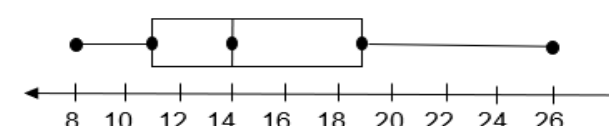
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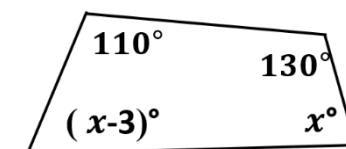
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18. Find the value of x shown in the figure.

- A. 55.5° B. 61.5°
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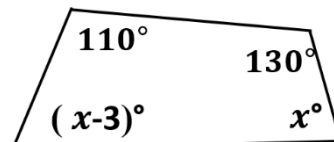
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2. Find the value of x shown in the figure .

A. 55.5° B. 61.5°
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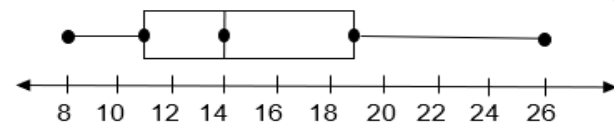
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A. x^2y^3 B. x^8y^{12} C. x^6y^7 D. x^2y

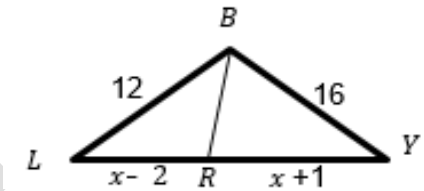
29. What is the y-intercept of the line $5x - 10y = 30$
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36. Which name does not apply to the number 7
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37. After rolling two fair number cubes, find the probability of getting a total sum of 10
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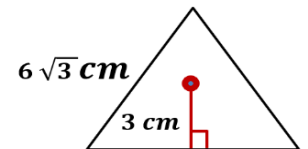
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Time: 2:30 hours

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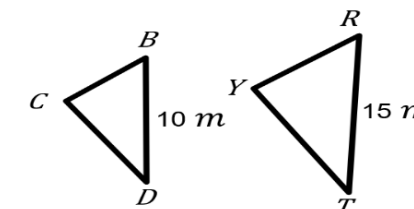
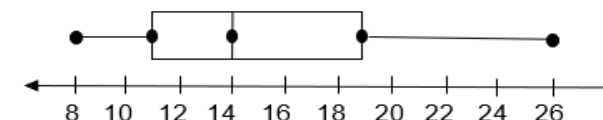
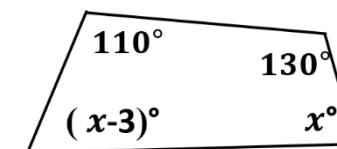
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Choose the correct answer: (2 marks for each right answer)

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- Which of the following points does the line with the equation $y - 2 = -3(x + 6)$ pass through?
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A. $y = -7$ B. $y = 4x - 3$ C. $x = 2$ D. $y = x^3 + 6$
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32. Find the coordinate of the midpoint of $\overline{BC}$ if where $B(4, -5)$ and $C(2, 1)$

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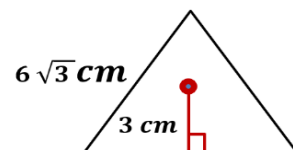
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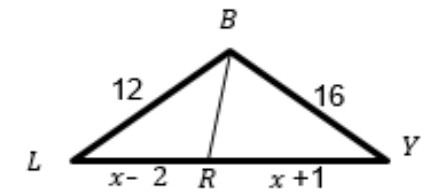


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41. Find the measure of each exterior angle of a regular octagon.

- A. 30° B. 36° C. 45° D. 60°

42. Which name does not apply to the number 7

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- A. $(1+x)(1-x)$ B. $(1-2x)(1+x)$
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44. The length of the side of a square is x meters and the area of this square is 169 m^2 . Find x

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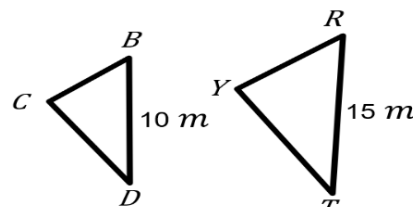
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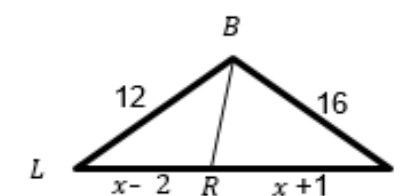
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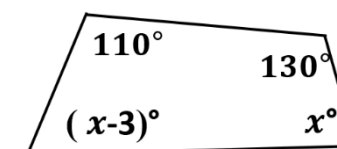
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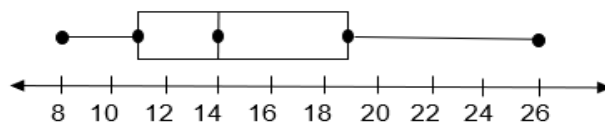
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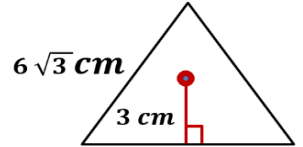
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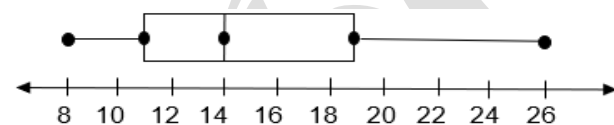
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Fingerprint

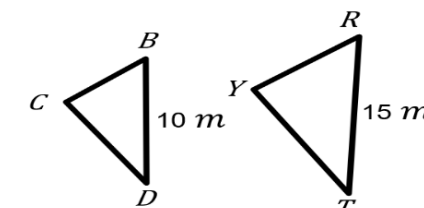
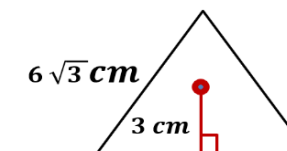


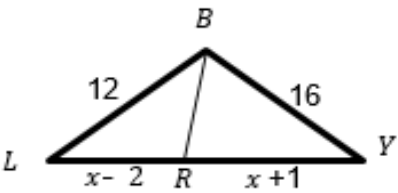
Choose the correct answer: (2 marks for each right answer)

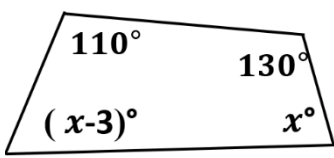
- What is the slope of the line $6x - 2y = -21$
 A. -3 B. -6 C. 6 D. 3
- Factor $1 - 4x^2$
 A. $(1 + x)(1 - x)$ B. $(1 - 2x)(1 + x)$
 C. $(1 - 2x)(1 + 2x)$ D. $(1 - x)(1 + 2x)$
- Find the perimeter of a regular 7 - gon with side length 8 cm
 A. 64 cm B. 54 cm C. 56 cm D. 49 cm
- What is the solution of the inequality $|2 - y| < 2$
 A. $-2 < y < 2$ B. $0 < y < 4$ C. $-4 < y < 0$ D. $-2 < y < 0$
- Find the slope of the line that passes through each pair of points (2 ,6)and(0 ,2)
 A. 2 B. -4 C. -2 D. 4
- Which of the following points does the line with the equation $y - 2 = -3(x + 6)$ pass through ?
 A. (-6 , -2) B. (-6 , 2)
 C. (6 , -2) D. (6 , 2)
- What is the solution of the equation $2|y| + 7 = 3$
 A. -3 and 7 B. -4 and 4 C. -4 and 2 D. No solution
- An experiment consists of tossing 2 fair coins, A and B. Find the probability that both coins will land the same way
 A. $\frac{1}{8}$ B. $\frac{1}{2}$ C. $\frac{1}{4}$ D. $\frac{3}{4}$
- Find the first quartile for the data set shown in the box-and-whisker plot
 A. 11 B. 19 C. 14 D. 46
- is used to two show how two related sets of data change over time
 A. double -line graph B. Double bar graph
 C. Frequency table D. Histogram
- Simplify $(x^2y^3)^4$
 A. x^2y^3 B. x^8y^{12} C. x^6y^7 D. x^2y
- What is the y-intercept of the line $5x - 10y = 30$
 A. (6 , 0) B. $(0, \frac{1}{2})$ C. (0 , -3) D. (0 , -6)
- What is the Solution of the inequality $6x + 4 > 5x - 2$
 A. $x > -4$ B. $x > -6$ C. $x > 6$ D. $x > 4$
- Simplify $(\frac{2}{5})^{-3}$
 A. $\frac{8}{125}$ B. $-\frac{8}{125}$ C. $\frac{125}{8}$ D. $-\frac{125}{8}$



- What is the solution of the equation $x^2 - 8x = 9$
 A. -1 and 9 B. 1 and -9 C. 1 and 9 D. -1 and -9
 - What is the area of the regular triangle shown opposite?
 A. $27\sqrt{3} \text{ cm}^2$ B. $21\sqrt{3} \text{ cm}^2$
 C. $18\sqrt{3} \text{ cm}^2$ D. $9\sqrt{3} \text{ cm}^2$
 - $\triangle BCD \sim \triangle RYT$ and the area of $\triangle BCD$ is $24m^2$. what is the area of $\triangle RYT$
 A. $54 m^2$ B. $36 m^2$
 C. $29 m^2$ D. $16 m^2$
 - Simplify $(x - 5)^2$
 A. $x^2 - 10x - 25$ B. $x^2 + 10x + 25$
 C. $x^2 - 10x + 25$ D. $x^2 - 25$
 - Rolling 2 fair number cubes and getting both a 1 and a 6 are two events
 A. Independent B. Dependent
 C. Mutually exclusive D. All answers are incorrect
 - A marble is randomly drawn out of a bag and then replaced. The table shows the results after 25 draws. Estimate the probability of drawing a yellow marble.
- | Outcome | Red | Blue | Yellow | Green |
|---------|-----|------|--------|-------|
| Draws | 6 | 7 | 8 | 4 |
- Find the measure of each exterior angle of a regular octagon .
 A. 30° B. 36° C. 45° D. 60°
 - The length of the side of a square is x meters and the area of this square is $169 m^2$ Find x
 A. 12m B. 14 m C. 13 m D. 11m
 - Which of the following equations represents a direct variation between x and y
 A. $y = \frac{3}{x}$ B. $y = 4x$ C. $y = 3x^2$ D. $y = 4 + x$
 - What is the simplest form of $\sqrt{3} \times \sqrt{15}$
 A. $3\sqrt{5}$ B. $5\sqrt{3}$ C. 45 D. $3\sqrt{15}$
 - Which line is perpendicular to the line $y = \frac{2}{3}x - 4$
 A. $y = \frac{3}{2}x - 4$ B. $Y = -\frac{2}{3}x - 4$
 C. $Y = \frac{2}{3}x - 4$ D. $y = -\frac{3}{2}x - 8$
 - Which name does not apply to the number 7
 A. Natural B. Rational C. Integer D. Irrational
 - Which number is not a solution of $\frac{2}{3}x \geq -\frac{1}{2}$
 A. $-\frac{1}{2}$ B. $\frac{1}{2}$ C. $-\frac{1}{4}$ D. -1



28. A sports announcer states that a Basil has an 84% chance of winning a race. Give the probability, as a fraction in lowest terms, that Basil will NOT win the race.
A. 0.16 B. 84 C. 0.84 D. 16
29. What is the simplest form of the expression $4\sqrt{12} + \sqrt{75}$?
A. $11\sqrt{3}$ B. $13\sqrt{3}$ C. $11\sqrt{5}$ D. $13\sqrt{5}$
30. After rolling two fair number cubes, find the probability of getting a total sum of 10.
A. $\frac{1}{12}$ B. $\frac{1}{6}$ C. $\frac{3}{10}$ D. $\frac{1}{9}$
31. Which expression is equivalent to $25x^2 - 20x + 4$?
A. $(5x + 2)^2$ B. $(x + 2)^2$ C. $(x - 2)^2$ D. $(5x - 2)^2$
32. Which of the following is a non-linear equation?
A. $y = -7$ B. $y = 4x - 3$
C. $x = 2$ D. $y = x^3 + 6$
33. Find the coordinate of the midpoint of $\overline{BC}$ if where $B(4, -5)$ and $C(2, 1)$.
A. $(6, -4)$ B. $(3, -2)$ C. $(4, 2)$ D. $(-5, 1)$
34. If the similarity ratio of two triangles is $\frac{b}{c}$, then the ratio of their perimeters is
A. $\frac{b}{c^2}$ B. $(\frac{b}{c})^2$ C. $\frac{c}{b}$ D. $\frac{b}{c}$
35. Find the length of $\overline{LR}$ in the figure shown.
- 
- A. 12 B. 11
C. 9 D. 16
36. A bag contains 5 blue balls and 8 green balls. How many yellow balls should be added so that the probability of drawing a green ball is $\frac{2}{5}$?
A. 13 B. 8 C. 5 D. 7
37. Between which numbers the positive solution of $x^2 = 20$ lies?
A. 4 and 5 B. 5 and 6 C. 6 and 7 D. 7 and 8
38. What is the equation in slope – intercept form of the line that passes through points $(1, 6)$ and $(-1, -2)$?
A. $y = 2x + 4$ B. $y = -3x + 6$
C. $y = 4x - 2$ D. $y = 4x + 2$
39. What is the relationship (correlation) between the age of a house and the number of people living in the house?
A. A negative correlation B. A positive correlation
C. Scatterplot D. No correlation
40. Find the missing term in the factorization: $15x - 25x^2 = 5x(3 - \square)$
A. $5x$ B. $-5x$ C. $-5x^2$ D. $5x^2$
41. For what values of x the value of $\sqrt{x - 19}$ is a real number?
A. $x \geq -19$ B. $x \leq -19$ C. $x \geq 19$ D. $x \leq 19$

42. Which of the following represents the complete factorization of the expression: $n(y + 4) - 5(y + 4)$?
A. $(y - 4)(5n + 4)$ B. $(y + 4)(n + 5)$
C. $(y + 4)(n - 5)$ D. $(y - 4)(n + 5)$
43. What is the solution of the equation $2x(x + 2) = 0$?
A. 0 and 2 B. 0 and -2 C. 2 and 2 D. -2 and 2
44. Which of the given lengths are the lengths of the sides of a triangle?
A. 3, 4, 7 B. 3, 4, 6 C. 2, 3, 6 D. 3, 3, 6
45. If 6, 8, 12 and 15, 20, x are the lengths of the corresponding sides of two similar triangles, what is the value of x ?
A. 6 B. 18 C. 24 D. 30
46. Which expression represents the rationalization of the denominator of $\frac{4}{3\sqrt{2}}$?
A. $\frac{\sqrt{2}}{3}$ B. $2\sqrt{2}$ C. $\frac{2\sqrt{2}}{3}$ D. $\frac{3\sqrt{2}}{2}$
47. Find the value of x shown in the figure.
- 
- A. 55.5° B. 61.5°
C. 60° D. 75°
48. What is the solution of the system $\begin{cases} y = -2x + 5 \\ y = x - 4 \end{cases}$?
A. $(3, -1)$ B. $(-3, -1)$
C. $(-1, -3)$ D. $(-1, 3)$
49. Sarah has taken three tests worth 100 points each. Her scores are 60, 90, and 86. She has one test left to take. What score must she get on her last test to get an average of 80?
A. 82 B. 84 C. 80 D. 86
50. Which measure of central tendency has the smallest value for the data set: 11, 11, 4, 15, 18, 22, 24, 7?
A. Median B. Mean C. Mode D. All are equal



Choose the correct answer: (2 marks for each right answer)

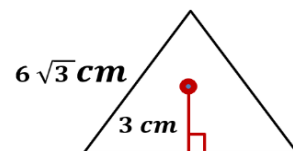
1. What is the area of the regular triangle shown opposite?

A. $27\sqrt{3} \text{ cm}^2$

B. $21\sqrt{3} \text{ cm}^2$

C. $18\sqrt{3} \text{ cm}^2$

D. $9\sqrt{3} \text{ cm}^2$



2. Between which numbers the positive solution of $x^2 = 20$ lies?

A. 4 and 5

B. 5 and 6

C. 6 and 7

D. 7 and 8

3. Which expression represents the rationalization of the denominator of $\frac{4}{3\sqrt{2}}$

A. $\frac{\sqrt{2}}{3}$

B. $2\sqrt{2}$

C. $\frac{2\sqrt{2}}{3}$

D. $\frac{3\sqrt{2}}{2}$

4. Which measure of central tendency has the smallest value

for the data set: 11, 11, 4, 15, 18, 22, 24, 7

A. Median

B. Mean

C. Mode

D. All are equal

5. $\triangle BCD \sim \triangle RYT$ and the area of $\triangle BCD$ is 24m^2 .

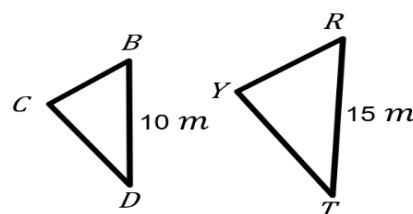
what is the area of $\triangle RYT$

A. 54 m^2

B. 36 m^2

C. 29 m^2

D. 16 m^2



6. Which line is perpendicular to the line $y = \frac{2}{3}x - 4$

A. $y = \frac{3}{2}x - 4$

B. $Y = -\frac{2}{3}x - 4$

C. $Y = \frac{2}{3}x - 4$

D. $y = -\frac{3}{2}x - 8$

7. What is the solution of the equation $2|y| + 7 = 3$

A. -3 and 7

B. -4 and 4

C. -4 and 2

D. No solution

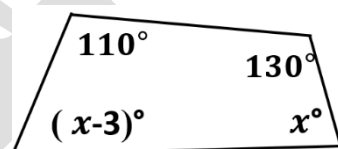
8. Find the value of x shown in the figure.

A. 55.5°

B. 61.5°

C. 60°

D. 75°



9. Find the coordinate of the midpoint of $\overline{BC}$ if where $B(4, -5)$ and $C(2, 1)$

A. $(6, -4)$

B. $(3, -2)$

C. $(4, 2)$

D. $(-5, 1)$

10. An experiment consists of tossing 2 fair coins, A and B. Find the probability that both coins will land the same way

A. $\frac{1}{8}$

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

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

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

11. What is the solution of the inequality $|2 - y| < 2$

A. $-2 < y < 2$

B. $0 < y < 4$

C. $-4 < y < 0$

D. $-2 < y < 0$

12. is used to two show how two related sets of data change over time

A. double -line graph

B. Double bar graph

C. Frequency table

D. Histogram

13. Which of the given lengths are the lengths of the sides a triangle?

A. 3, 4, 7

B. 3, 4, 6

C. 2, 3, 6

D. 3, 3, 6

14. What is the relationship (correlation) between the age of a house and the number of people living in the house

A. A negative correlation

B. A positive correlation

C. Scatterplot

D. No correlation

15. Sarah has taken three tests worth 100 points each. Her scores are 60, 90, and 86 she has one test left to take. What score must she get on her last test to get an average of 80

A. 82

B. 84

C. 80

D. 86

16. Find the perimeter of a regular 7 - gon with side length 8 cm

A. 64 cm

B. 54 cm

C. 56 cm

D. 49 cm

17. For what values of x the value of $\sqrt{x - 19}$ is a real number?

A. $x \geq -19$

B. $x \leq -19$

C. $x \geq 19$

D. $x \leq 19$

18. Which of the following equations represents a direct variation between x and y

A. $y = \frac{3}{x}$

B. $y = 4x$

C. $y = 3x^2$

D. $y = 4 + x$

19. If 6, 8, 12 and 15, 20, x are the lengths of the corresponding sides of two similar triangles, what is the value of x

A. 6

B. 18

C. 24

D. 30

20. Which of the following represents the complete factorization of the expression: $n(y + 4) - 5(y + 4)$

A. $(y - 4)(5n + 4)$

B. $(y + 4)(n + 5)$

C. $(y + 4)(n - 5)$

D. $(y - 4)(n + 5)$

21. A bag contains 5 blue balls and 8 green balls. How many yellow balls should be added so that the probability of drawing a green ball is $\frac{2}{5}$

A. 13

B. 8

C. 5

D. 7

22. Which of the following points does the line with the equation $y - 2 = -3(x + 6)$ pass through?

A. $(-6, -2)$

B. $(-6, 2)$

C. $(6, -2)$

D. $(6, 2)$

23. What is the solution of the equation $2x(x + 2) = 0$?

A. 0 and 2

B. 0 and -2

C. 2 and 2

D. -2 and 2

24. After rolling two fair number cubes, find the probability of getting a total sum of 10

A. $\frac{1}{12}$

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

C. $\frac{3}{10}$

D. $\frac{1}{9}$

25. What is the simplest form of the expression $4\sqrt{12} + \sqrt{75}$

A. $11\sqrt{3}$

B. $13\sqrt{3}$

C. $11\sqrt{5}$

D. $13\sqrt{5}$

26. A marble is randomly drawn out of a bag and then replaced. The table shows the results after 25 draws. Estimate the probability of drawing a yellow marble.

A. 0.8
C. 0.34

B. 0.32
D. 0.4

Outcome	Red	Blue	Yellow	Green
Draws	6	7	8	4

27. Simplify $(x - 5)^2$
A. $x^2 - 10x - 25$
C. $x^2 - 10x + 25$
- B. $x^2 + 10x + 25$
D. $x^2 - 25$

28. Simplify $\left(\frac{2}{5}\right)^{-3}$
A. $\frac{8}{125}$
B. $-\frac{8}{125}$
C. $\frac{125}{8}$
D. $-\frac{125}{8}$

29. The length of the side of a square is x meters and the area of this square is $169 m^2$. Find x
A. $12m$
B. $14 m$
C. $13 m$
D. $11m$

30. Find the measure of each exterior angle of a regular octagon.
A. 30°
B. 36°
C. 45°
D. 60°

31. What is the solution of the system $\begin{cases} y = -2x + 5 \\ y = x - 4 \end{cases}$
A. $(3, -1)$
C. $(-1, -3)$
- B. $(-3, -1)$
D. $(-1, 3)$

32. What is the solution of the equation $x^2 - 8x = 9$
A. -1 and 9
B. 1 and -9
C. 1 and 9
D. -1 and -9

33. Which number is not a solution of $\frac{2}{3}x \geq -\frac{1}{2}$
A. $-\frac{1}{2}$
B. $\frac{1}{2}$
C. $-\frac{1}{4}$
D. -1

34. If the similarity ratio of two triangles is $\frac{b}{c}$, then the ratio of their perimeters is
A. $\frac{b}{c^2}$
B. $\left(\frac{b}{c}\right)^2$
C. $\frac{c}{b}$
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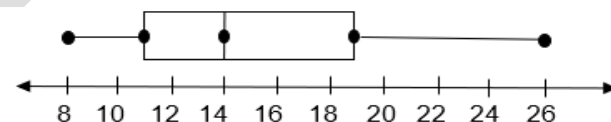
35. Find the missing term in the factorization: $15x - 25x^2 = 5x(3 - \square)$
A. $5x$
B. $-5x$
C. $-5x^2$
D. $5x^2$

36. What is the simplest form of $\sqrt{3} \times \sqrt{15}$
A. $3\sqrt{5}$
B. $5\sqrt{3}$
C. 45
D. $3\sqrt{15}$

37. Find the slope of the line that passes through each pair of points $(2, 6)$ and $(0, 2)$
A. 2
B. -4
C. -2
D. 4

38. Find the first quartile for the data set shown in the box-and-whisker plot

A. 11
B. 19
C. 14
D. 46



39. A sports announcer states that a Basil has an 84% chance of winning a race. Give the probability, as a fraction in lowest terms, that Basil will NOT win the race.
A. 0.16
B. 84
C. 0.84
D. 16

40. Which of the following is a non-linear equation?

A. $y = -7$

B. $y = 4x - 3$

C. $x = 2$

D. $y = x^3 + 6$

41. What is the equation in slope – intercept form of the line that passes through points $(1, 6)$ and $(-1, -2)$
A. $y = 2x + 4$
B. $y = -3x + 6$

C. $y = 4x - 2$

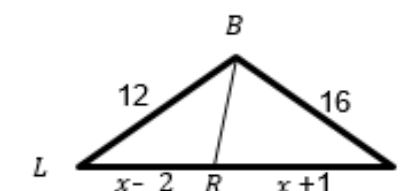
D. $y = 4x + 2$

42. Factor $1 - 4x^2$
A. $(1 + x)(1 - x)$
B. $(1 - 2x)(1 + x)$
C. $(1 - 2x)(1 + 2x)$
D. $(1 - x)(1 + 2x)$

43. What is the Solution of the inequality $6x + 4 > 5x - 2$
A. $x > -4$
B. $x > -6$
C. $x > 6$
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44. What is the slope of the line $6x - 2y = -21$
A. -3
B. -6
C. 6
D. 3

45. Find the length of $\overline{LR}$ in the figure shown.
A. 12
C. 9
B. 11
D. 16



46. Simplify $(x^2y^3)^4$
A. x^2y^3
B. x^8y^{12}
C. x^6y^7
D. x^2y

47. Which name does not apply to the number 7
A. Natural
B. Rational
C. Integer
D. Irrational

48. Rolling 2 fair number cubes and getting both a 1 and a 6 are two events
A. Independent
B. Dependent
C. Mutually exclusive
D. All answers are incorrect

49. Which expression is equivalent to $25x^2 - 20x + 4$
A. $(5x + 2)^2$
B. $(x + 2)^2$
C. $(x - 2)^2$
D. $(5x - 2)^2$

50. What is the y-intercept of the line $5x - 10y = 30$
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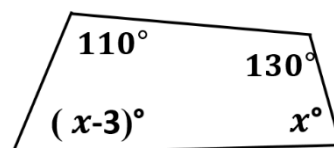
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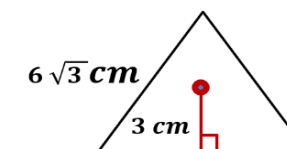
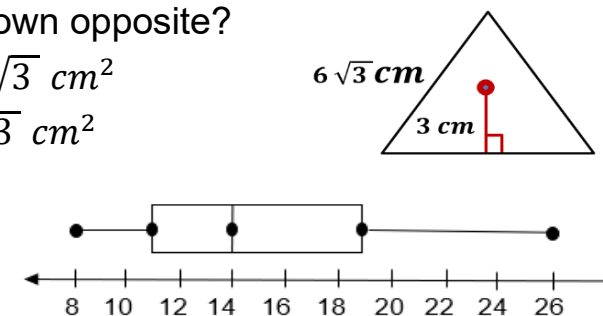
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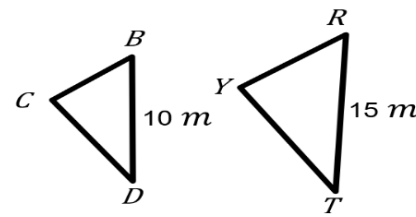
- Which line is perpendicular to the line $y = \frac{2}{3}x - 4$
A. $y = \frac{3}{2}x - 4$ B. $Y = -\frac{2}{3}x - 4$
C. $Y = \frac{2}{3}x - 4$ D. $y = -\frac{3}{2}x - 8$
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A. -3 and 7 B. -4 and 4 C. -4 and 2 D. No solution
- Find the value of x shown in the figure.
A. 55.5° B. 61.5°
C. 60° D. 75°
- If 6, 8, 12 and 15, 20, x are the lengths of the corresponding sides of two similar triangles, what is the value of x
A. 6 B. 18 C. 24 D. 30
- What is the slope of the line $6x - 2y = -21$
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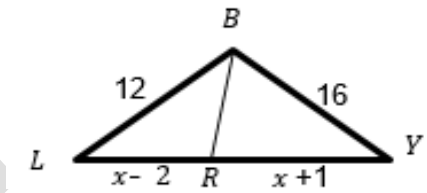
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A. 11 B. 19 C. 14 D. 46
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A. $y = 2x + 4$ B. $y = -3x + 6$
C. $y = 4x - 2$ D. $y = 4x + 2$
- If the similarity ratio of two triangles is $\frac{b}{c}$, then the ratio of their perimeters is
A. $\frac{b}{c^2}$ B. $(\frac{b}{c})^2$ C. $\frac{c}{b}$ D. $\frac{b}{c}$
- Find the slope of the line that passes through each pair of points $(2, 6)$ and $(0, 2)$
A. 2 B. -4 C. -2 D. 4
- Simplify $(\frac{2}{5})^{-3}$
A. $\frac{8}{125}$ B. $-\frac{8}{125}$ C. $\frac{125}{8}$ D. $-\frac{125}{8}$
- Rolling 2 fair number cubes and getting both a 1 and a 6 are two events
A. Independent B. Dependent
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- Which expression represents the rationalization of the denominator of $\frac{4}{3\sqrt{2}}$
A. $\frac{\sqrt{2}}{3}$ B. $2\sqrt{2}$ C. $\frac{2\sqrt{2}}{3}$ D. $\frac{3\sqrt{2}}{2}$
- What is the solution of the inequality $|2 - y| < 2$
A. $-2 < y < 2$ B. $0 < y < 4$ C. $-4 < y < 0$ D. $-2 < y < 0$
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A. $y = \frac{3}{x}$ B. $y = 4x$ C. $y = 3x^2$ D. $y = 4 + x$



27. What is the relationship (correlation) between the age of a house and the number of people living in the house
 A. A negative correlation B. A positive correlation
 C. Scatterplot D. No correlation
28. $\triangle BCD \sim \triangle RYT$ and the area of $\triangle BCD$ is $24m^2$. what is the area of $\triangle RYT$
 A. $54 m^2$ B. $36 m^2$
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29. What is the solution of the equation $2x(x+2) = 0$?
 A. 0 and 2 B. 0 and -2 C. 2 and 2 D. -2 and 2
30. Which name does not apply to the number 7
 A. Natural B. Rational C. Integer D. Irrational
31. is used to show how two related sets of data change over time
 A. double -line graph B. Double bar graph
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32. What is the solution of the equation $x^2 - 8x = 9$
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39. Which of the given lengths are the lengths of the sides of a triangle?
 A. 3, 4, 7 B. 3, 4, 6 C. 2, 3, 6 D. 3, 3, 6
40. Which number is not a solution of $\frac{2}{3}x \geq -\frac{1}{2}$
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41. Between which numbers the positive solution of $x^2 = 20$ lies?
 A. 4 and 5 B. 5 and 6 C. 6 and 7 D. 7 and 8
42. Find the length of $\overline{LR}$ in the figure shown.
43. Find the measure of each exterior angle of a regular octagon.
 A. 30° B. 36° C. 45° D. 60°
44. After rolling two fair number cubes, find the probability of getting a total sum of 10
 A. $\frac{1}{12}$ B. $\frac{1}{6}$ C. $\frac{3}{10}$ D. $\frac{1}{9}$
45. Simplify $(x^2y^3)^4$
 A. x^2y^3 B. x^8y^{12} C. x^6y^7 D. x^2y
46. Which of the following points does the line with the equation $y - 2 = -3(x + 6)$ pass through?
 A. $(-6, -2)$ B. $(-6, 2)$
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- | Outcome | Red | Blue | Yellow | Green |
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| Draws | 6 | 7 | 8 | 4 |
50. Find the perimeter of a regular 7-gon with side length 8 cm
 A. 64 cm B. 54 cm C. 56 cm D. 49 cm





Time: 2:30 hours

Fingerprint



Choose the correct answer: (2 marks for each right answer)

- What is the relationship (correlation) between the age of a house and the number of people living in the house
 A. A negative correlation B. A positive correlation
 C. Scatterplot D. No correlation
- What is the y-intercept of the line $5x - 10y = 30$
 A. (6, 0) B. $(0, \frac{1}{2})$ C. (0, -3) D. (0, -6)
- Which of the following represents the complete factorization of the expression: $n(y+4) - 5(y+4)$
 A. $(y-4)(5n+4)$ B. $(y+4)(n+5)$
 C. $(y+4)(n-5)$ D. $(y-4)(n+5)$
- Find the missing term in the factorization: $15x - 25x^2 = 5x(3 - \square)$
 A. $5x$ B. $-5x$ C. $-5x^2$ D. $5x^2$
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 A. $x^2 - 10x - 25$ B. $x^2 + 10x + 25$
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- A marble is randomly drawn out of a bag and then replaced. The table shows the results after 25 draws. Estimate the probability of drawing a yellow marble.

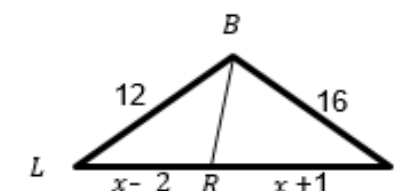
- A. 0.8 B. 0.32
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Outcome	Red	Blue	Yellow	Green
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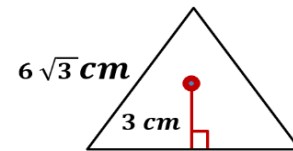
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- A. double -line graph B. Double bar graph
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30. What is the area of the regular triangle shown opposite?

- A. $27\sqrt{3} \text{ cm}^2$ B. $21\sqrt{3} \text{ cm}^2$
C. $18\sqrt{3} \text{ cm}^2$ D. $9\sqrt{3} \text{ cm}^2$



31. The length of the side of a square is x meters and the area of this square is 169 m^2 . Find x

- A. 12 m B. 14 m C. 13 m D. 11 m

32. An experiment consists of tossing 2 fair coins, A and B. Find the probability that both coins will land the same way

- A. $\frac{1}{8}$ B. $\frac{1}{2}$ C. $\frac{1}{4}$ D. $\frac{3}{4}$

33. Find the perimeter of a regular 7 - gon with side length 8 cm

- A. 64 cm B. 54 cm C. 56 cm D. 49 cm

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- A. $\frac{b}{c^2}$ B. $(\frac{b}{c})^2$ C. $\frac{c}{b}$ D. $\frac{b}{c}$

35. Factor $1 - 4x^2$

- A. $(1 + x)(1 - x)$ B. $(1 - 2x)(1 + x)$
C. $(1 - 2x)(1 + 2x)$ D. $(1 - x)(1 + 2x)$

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- A. $x > -4$ B. $x > -6$ C. $x > 6$ D. $x > 4$

40. Which name does not apply to the number 7

- A. Natural B. Rational C. Integer D. Irrational

41. What is the slope of the line $6x - 2y = -21$

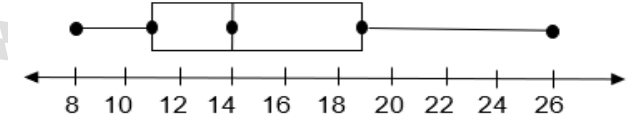
- A. -3 B. -6 C. 6 D. 3

42. What is the solution of the system $\begin{cases} y = -2x + 5 \\ y = x - 4 \end{cases}$

- A. (3, -1) B. (-3, -1)
C. (-1, -3) D. (-1, 3)

43. Find the first quartile for the data set shown in the box-and-whisker plot

- A. 11 B. 19 C. 14 D. 46

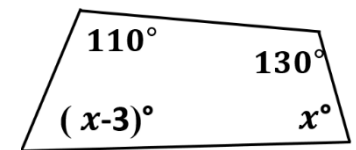


44. Simplify $(x^2y^3)^4$

- A. x^2y^3 B. x^8y^{12} C. x^6y^7 D. x^2y

45. Find the value of x shown in the figure .

- A. 55.5° B. 61.5°
C. 60° D. 75°



46. Which expression is equivalent to $25x^2 - 20x + 4$

- A. $(5x + 2)^2$ B. $(x + 2)^2$ C. $(x - 2)^2$ D. $(5x - 2)^2$

47. If 6, 8, 12 and 15, 20, x are the lengths of the corresponding sides of two similar triangles, what is the value of x

- A. 6 B. 18 C. 24 D. 30

48. Which of the following is a non-linear equation ?

- A. $y = -7$ B. $y = 4x - 3$
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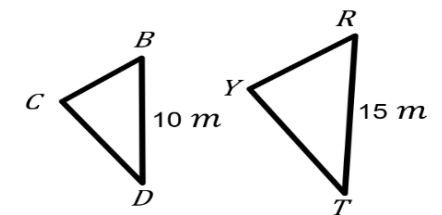
49. For what values of x the value of $\sqrt{x - 19}$ is a real number ?

- A. $x \geq -19$ B. $x \leq -19$ C. $x \geq 19$ D. $x \leq 19$

50. $\triangle BCD \sim \triangle RYT$ and the area of $\triangle BCD$ is 24 m^2 .

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Choose the correct answer: (2 marks for each right answer)

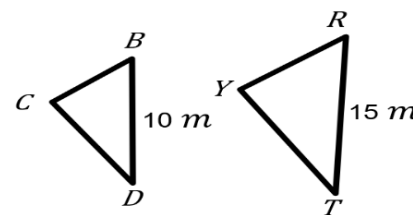
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3. Find the perimeter of a regular 7 - gon with side length $8 cm$

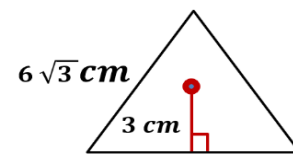
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6. What is the solution of the system $\begin{cases} y = -2x + 5 \\ y = x - 4 \end{cases}$

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7. Find the coordinate of the midpoint of $\overline{BC}$ if where $B(4, -5)$ and $C(2, 1)$

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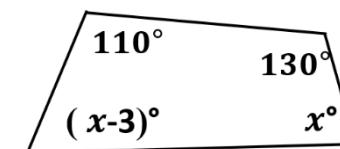
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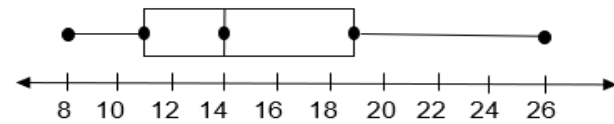
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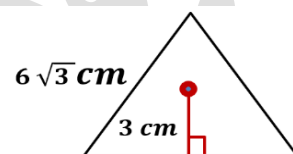
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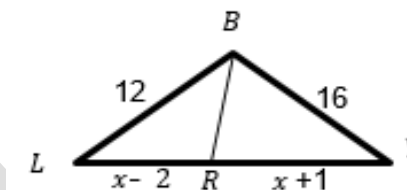


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C. 9 D. 16



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- A. 0.8 B. 0.32
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Outcome	Red	Blue	Yellow	Green
Draws	6	7	8	4

25. What is the y-intercept of the line $5x - 10y = 30$

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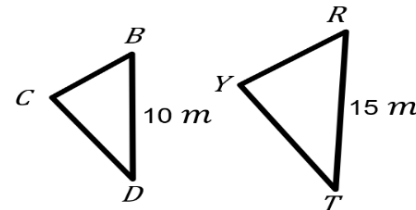
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34. Find the measure of each exterior angle of a regular octagon .
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A. x^2y^3 B. x^8y^{12} C. x^6y^7 D. x^2y

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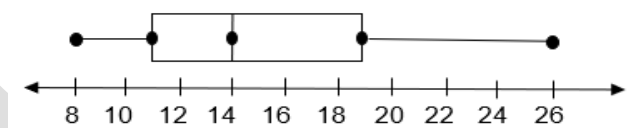
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C. $x^2 - 10x + 25$ D. $x^2 - 25$

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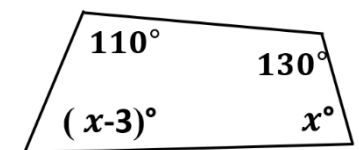
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A. 55.5° B. 61.5°
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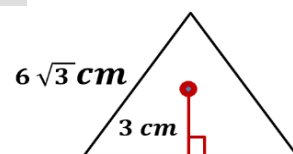
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50. Find the missing term in the factorization: $15x - 25x^2 = 5x(3 - \square)$
A. $5x$ B. $-5x$ C. $-5x^2$ D. $5x^2$



Choose the correct answer: (2 marks for each right answer)

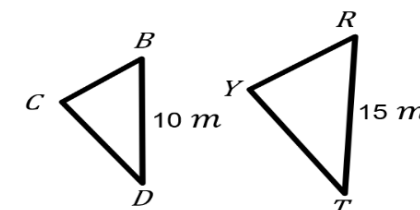
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 - $x^2 - 10x - 25$
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 - $x \geq -19$
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- Find the perimeter of a regular 7 - gon with side length 8 cm
 - 64 cm
 - 54 cm
 - 56 cm
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- After rolling two fair number cubes, find the probability of getting a total sum of 10
 - $\frac{1}{12}$
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 - $27\sqrt{3} \text{ cm}^2$
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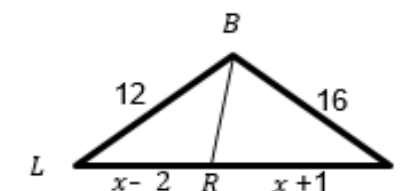
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- 12m
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- 3, 4, 7
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- 3, 3, 6

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- $(-6, -2)$
- $(-6, 2)$
- $(6, -2)$
- $(6, 2)$

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- $\frac{8}{125}$
- $-\frac{8}{125}$
- $\frac{125}{8}$
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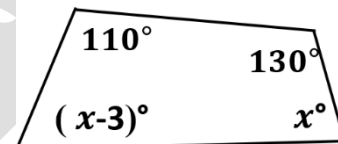
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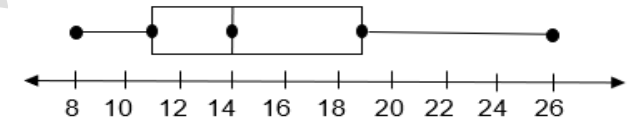
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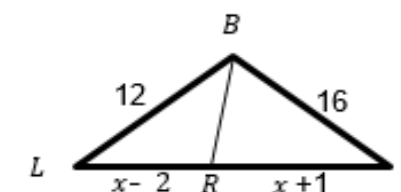
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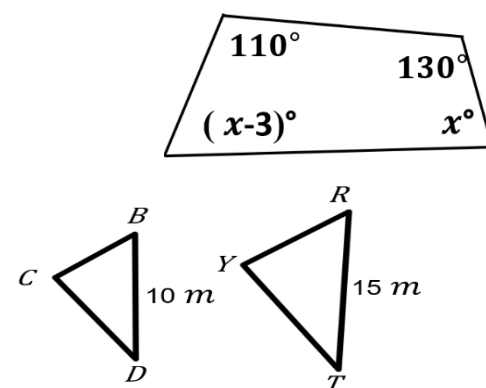
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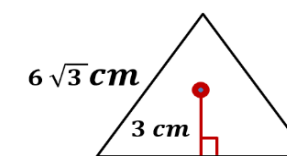
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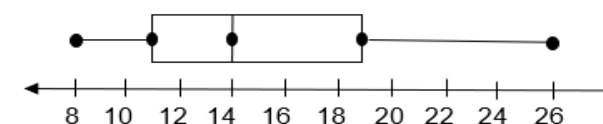
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- A.11 B. 19 C.14 D.46



49. What is the y-intercept of the line $5x - 10y = 30$

- A. (6 , 0) B. $(0 , \frac{1}{2})$ C. (0 , -3) D. (0 , -6)

50. What is the solution of the equation $x^2 - 8x = 9$

- A. -1 and 9 B. 1 and - 9 C. 1 and9 D. -1 and - 9



Time: 2:30 hours

Fingerprint

Q

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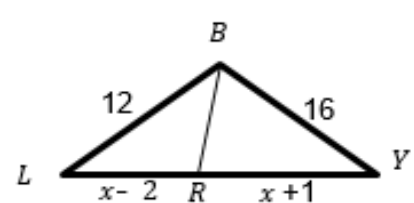
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A. $-\frac{1}{2}$ B. $\frac{1}{2}$ C. $-\frac{1}{4}$ D. -1
- Sarah has taken three tests worth 100 points each. Her scores are 60, 90, and 86 she has one test left to take. What score must she get on her last test to get an average of 80
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A. $\frac{8}{125}$ B. $-\frac{8}{125}$ C. $\frac{125}{8}$ D. $-\frac{125}{8}$
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A. 4 and 5 B. 5 and 6 C. 6 and 7 D. 7 and 8
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- A sports announcer states that a Basil has an 84% chance of winning a race Give the probability, as a fraction in lowest terms, that Basil will NOT win the race
A. 0.16 B. 84 C. 0.84 D. 16
- Find the coordinate of the midpoint of $\overline{BC}$ if where $B(4, -5)$ and $C(2, 1)$
A. $(6, -4)$ B. $(3, -2)$ C. $(4, 2)$ D. $(-5, 1)$

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B. 0.32
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Outcome	Red	Blue	Yellow	Green
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14. Find the missing term in the factorization: $15x - 25x^2 = 5x(3 - \square)$
A. $5x$ B. $-5x$ C. $-5x^2$ D. $5x^2$
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A. $x \geq -19$ B. $x \leq -19$ C. $x \geq 19$ D. $x \leq 19$
17. Find the length of $\overline{LR}$ in the figure shown.
- 
- A. 12 B. 11
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A. -3 and 7 B. -4 and 4 C. -4 and 2 D. No solution
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23. Which name does not apply to the number 7
A. Natural B. Rational C. Integer D. Irrational
24. Which of the given lengths are the lengths of the sides a triangle?
A. 3, 4, 7 B. 3, 4, 6 C. 2, 3, 6 D. 3, 3, 6
25. If the similarity ratio of two triangles is $\frac{b}{c}$, then the ratio of their perimeters is
A. $\frac{b}{c^2}$ B. $(\frac{b}{c})^2$ C. $\frac{c}{b}$ D. $\frac{b}{c}$

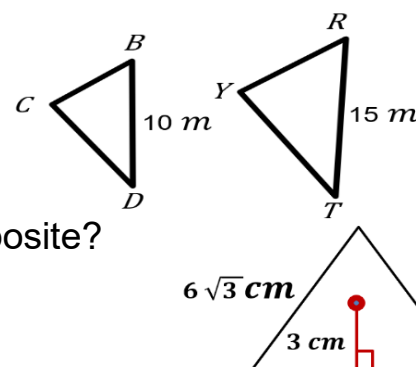
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A. $\frac{1}{8}$ B. $\frac{1}{2}$ C. $\frac{1}{4}$ D. $\frac{3}{4}$

27. $\triangle BCD \sim \triangle RYT$ and the area of $\triangle BCD$ is $24m^2$.

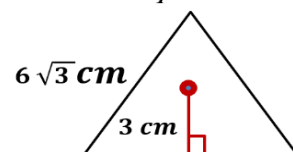
what is the area of $\triangle RYT$

A. $54 m^2$ B. $36 m^2$
C. $29 m^2$ D. $16 m^2$



28. What is the area of the regular triangle shown opposite?

A. $27\sqrt{3} cm^2$ B. $21\sqrt{3} cm^2$
C. $18\sqrt{3} cm^2$ D. $9\sqrt{3} cm^2$



29. What is the solution of the inequality $|2 - y| < 2$

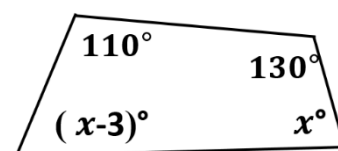
A. $-2 < y < 2$ B. $0 < y < 4$ C. $-4 < y < 0$ D. $-2 < y < 0$

30. Which expression represents the rationalization of the denominator of $\frac{4}{3\sqrt{2}}$

A. $\frac{\sqrt{2}}{3}$ B. $2\sqrt{2}$ C. $\frac{2\sqrt{2}}{3}$ D. $\frac{3\sqrt{2}}{2}$

31. Find the value of x shown in the figure .

A. 55.5° B. 61.5°
C. 60° D. 75°



32. Which of the following equations represents a direct variation between x and y

A. $y = \frac{3}{x}$ B. $y = 4x$ C. $y = 3x^2$ D. $y = 4 + x$

33. Find the measure of each exterior angle of a regular octagon .

A. 30° B. 36° C. 45° D. 60°

34. What is the slope of the line $6x - 2y = -21$

A. -3 B. -6 C. 6 D. 3

35. What is the Solution of the inequality $6x + 4 > 5x - 2$

A. $x > -4$ B. $x > -6$ C. $x > 6$ D. $x > 4$

36. Find the slope of the line that passes through each pair of points $(2, 6)$ and $(0, 2)$

A. 2 B. -4 C. -2 D. 4

37. What is the simplest form of $\sqrt{3} \times \sqrt{15}$

A. $3\sqrt{5}$ B. $5\sqrt{3}$ C. 45 D. $3\sqrt{15}$

38. Rolling 2 fair number cubes and getting both a 1 and a 6 are two events

A. Independent B. Dependent
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39. What is the solution of the equation $x^2 - 8x = 9$

A. -1 and 9 B. 1 and -9 C. 1 and 9 D. -1 and -9

40. Simplify $(x - 5)^2$

A. $x^2 - 10x - 25$ B. $x^2 + 10x + 25$
C. $x^2 - 10x + 25$ D. $x^2 - 25$

41. Which expression is equivalent to $25x^2 - 20x + 4$

A. $(5x + 2)^2$ B. $(x + 2)^2$ C. $(x - 2)^2$ D. $(5x - 2)^2$

42. What is the y-intercept of the line $5x - 10y = 30$

A. $(6, 0)$ B. $(0, \frac{1}{2})$ C. $(0, -3)$ D. $(0, -6)$

43. is used to show how two related sets of data change over time

A. double -line graph B. Double bar graph
C. Frequency table D. Histogram

44. Find the perimeter of a regular 7 - gon with side length $8 cm$

A. $64 cm$ B. $54 cm$ C. $56 cm$ D. $49 cm$

45. A bag contains 5 blue balls and 8 green balls. How many yellow balls should be added so that the probability of drawing a green ball is $\frac{2}{5}$

A. 13 B. 8 C. 5 D. 7

46. Simplify $(x^2y^3)^4$

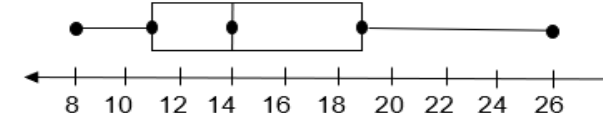
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A. $y = -7$ B. $y = 4x - 3$
C. $x = 2$ D. $y = x^3 + 6$

48. Find the first quartile for the data set shown in the box-and-whisker plot

A. 11 B. 19 C. 14 D. 46



49. The length of the side of a square is x meters and the area of this square is $169 m^2$ Find x

A. $12m$ B. $14 m$ C. $13 m$ D. $11m$

50. What is the relationship (correlation) between the age of a house and the number of people living in the house

A. A negative correlation B. A positive correlation
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Fingerprint

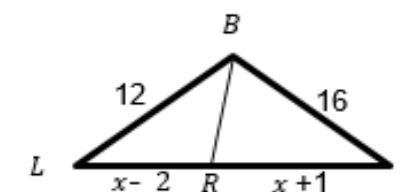
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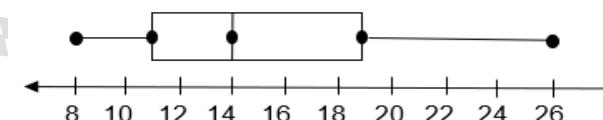
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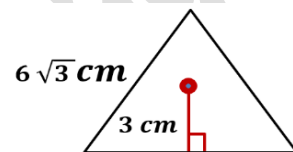
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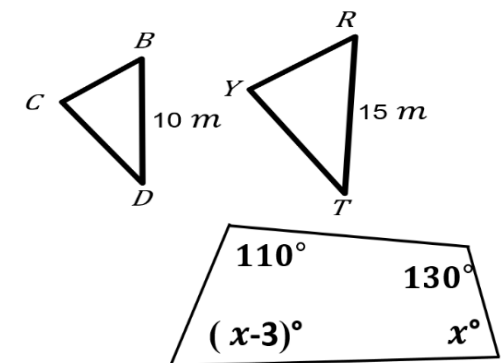
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- A. $(6, 0)$ B. $(0, \frac{1}{2})$ C. $(0, -3)$ D. $(0, -6)$

27. Find the measure of each exterior angle of a regular octagon .

- A. 30° B. 36° C. 45° D. 60°

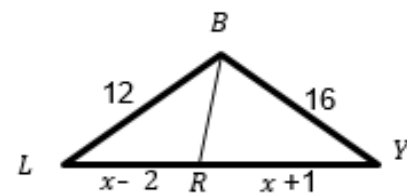
28. Which expression is equivalent to $25x^2 - 20x + 4$
 A. $(5x + 2)^2$ B. $(x + 2)^2$ C. $(x - 2)^2$ D. $(5x - 2)^2$

29. Which measure of central tendency has the smallest value for the data set: 11, 11, 4, 15, 18, 22, 24, 7

A. Median B. Mean C. Mode D. All are equal

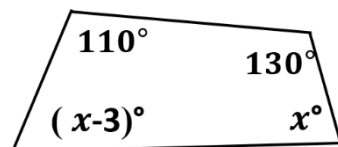
30. Find the length of $\overline{LR}$ in the figure shown.

A. 12 B. 11
C. 9 D. 16



31. Find the value of x shown in the figure.

A. 55.5° B. 61.5°
C. 60° D. 75°



32. Which of the following equations represents a direct variation between x and y

A. $y = \frac{3}{x}$ B. $y = 4x$ C. $y = 3x^2$ D. $y = 4 + x$

33. A bag contains 5 blue balls and 8 green balls. How many yellow balls should be added so that the probability of drawing a green ball is $\frac{2}{5}$

A. 13 B. 8 C. 5 D. 7

34. What is the solution of the inequality $|2 - y| < 2$

A. $-2 < y < 2$ B. $0 < y < 4$ C. $-4 < y < 0$ D. $-2 < y < 0$

35. What is the slope of the line $6x - 2y = -21$

A. -3 B. -6 C. 6 D. 3

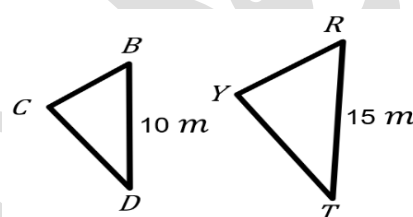
36. Which of the following is a non-linear equation?

A. $y = -7$ B. $y = 4x - 3$
C. $x = 2$ D. $y = x^3 + 6$

37. $\triangle BCD \sim \triangle RYT$ and the area of $\triangle BCD$ is $24m^2$.

what is the area of $\triangle RYT$

A. $54m^2$ B. $36m^2$
C. $29m^2$ D. $16m^2$



38. Find the first quartile for the data set shown in the box-and-whisker plot

A. 11 B. 19 C. 14 D. 46



39. Between which numbers the positive solution of $x^2 = 20$ lies?

A. 4 and 5 B. 5 and 6 C. 6 and 7 D. 7 and 8

40. A sports announcer states that a Basil has an 84% chance of winning a race. Give the probability, as a fraction in lowest terms, that Basil will NOT win the race

A. 0.16 B. 84 C. 0.84 D. 16

41. Rolling 2 fair number cubes and getting both a 1 and a 6 are two events

A. Independent B. Dependent
C. Mutually exclusive D. All answers are incorrect

42. Which name does not apply to the number 7

A. Natural B. Rational C. Integer D. Irrational

43. Which of the given lengths are the lengths of the sides a triangle?

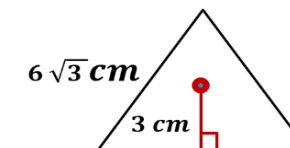
A. 3, 4, 7 B. 3, 4, 6 C. 2, 3, 6 D. 3, 3, 6

44. What is the simplest form of $\sqrt{3} \times \sqrt{15}$

A. $3\sqrt{5}$ B. $5\sqrt{3}$ C. 45 D. $3\sqrt{15}$

45. What is the area of the regular triangle shown opposite?

A. $27\sqrt{3} \text{ cm}^2$ B. $21\sqrt{3} \text{ cm}^2$
C. $18\sqrt{3} \text{ cm}^2$ D. $9\sqrt{3} \text{ cm}^2$



46. Simplify $(x^2y^3)^4$

A. x^2y^3 B. x^8y^{12} C. x^6y^7 D. x^2y

47. If the similarity ratio of two triangles is $\frac{b}{c}$, then the ratio of their perimeters is

A. $\frac{b}{c^2}$ B. $(\frac{b}{c})^2$ C. $\frac{c}{b}$ D. $\frac{b}{c}$

48. What is the relationship (correlation) between the age of a house and the number of people living in the house

A. A negative correlation B. A positive correlation
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49. Find the perimeter of a regular 7-gon with side length 8 cm

A. 64 cm B. 54 cm C. 56 cm D. 49 cm

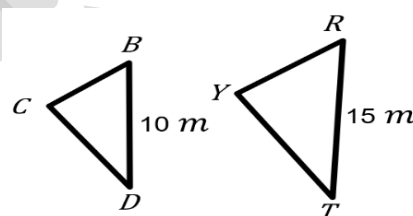
50. Sarah has taken three tests worth 100 points each. Her scores are 60, 90, and 86. She has one test left to take. What score must she get on her last test to get an average of 80

A. 82 B. 84 C. 80 D. 86



Choose the correct answer: (2 marks for each right answer)

- Find the coordinate of the midpoint of $\overline{BC}$ if where $B(4, -5)$ and $C(2, 1)$
A. $(6, -4)$ B. $(3, -2)$ C. $(4, 2)$ D. $(-5, 1)$
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A. $\frac{b}{c^2}$ B. $(\frac{b}{c})^2$ C. $\frac{c}{b}$ D. $\frac{b}{c}$
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A. $(5x + 2)^2$ B. $(x + 2)^2$ C. $(x - 2)^2$ D. $(5x - 2)^2$
- Which expression represents the rationalization of the denominator of $\frac{4}{3\sqrt{2}}$
A. $\frac{\sqrt{2}}{3}$ B. $2\sqrt{2}$ C. $\frac{2\sqrt{2}}{3}$ D. $\frac{3\sqrt{2}}{2}$
- After rolling two fair number cubes, find the probability of getting a total sum of 10
A. $\frac{1}{12}$ B. $\frac{1}{6}$ C. $\frac{3}{10}$ D. $\frac{1}{9}$
- For what values of x the value of $\sqrt{x - 19}$ is a real number?
A. $x \geq -19$ B. $x \leq -19$ C. $x \geq 19$ D. $x \leq 19$
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- Simplify $(\frac{2}{5})^{-3}$
A. $\frac{8}{125}$ B. $-\frac{8}{125}$ C. $\frac{125}{8}$ D. $-\frac{125}{8}$
- $\triangle BCD \sim \triangle RYT$ and the area of $\triangle BCD$ is $24m^2$. what is the area of $\triangle RYT$
A. $54m^2$ B. $36m^2$ C. $29m^2$ D. $16m^2$
- Between which numbers the positive solution of $x^2 = 20$ lies?
A. 4 and 5 B. 5 and 6 C. 6 and 7 D. 7 and 8
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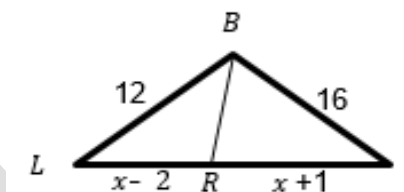


14. Which name does not apply to the number 7

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15. Find the length of $\overline{LR}$ in the figure shown.

A. 12 B. 11
C. 9 D. 16



16. If 6, 8, 12 and 15, 20, x are the lengths of the corresponding sides of two similar triangles, what is the value of x

A. 6 B. 18 C. 24 D. 30

17. Find the perimeter of a regular 7-gon with side length 8 cm

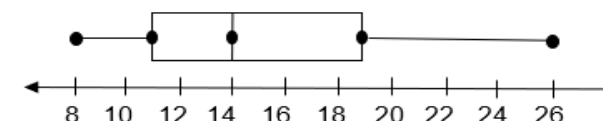
A. 64 cm B. 54 cm C. 56 cm D. 49 cm

18. The length of the side of a square is x meters and the area of this square is $169m^2$. Find x

A. 12m B. 14m C. 13m D. 11m

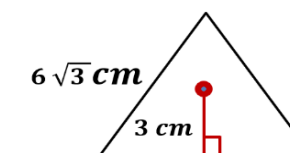
19. Find the first quartile for the data set shown in the box-and-whisker plot

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20. What is the area of the regular triangle shown opposite?

A. $27\sqrt{3}cm^2$ B. $21\sqrt{3}cm^2$
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21. Rolling 2 fair number cubes and getting both a 1 and a 6 are two events

A. Independent B. Dependent
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22. Which line is perpendicular to the line $y = \frac{2}{3}x - 4$

A. $y = \frac{3}{2}x - 4$ B. $y = -\frac{2}{3}x - 4$
C. $y = \frac{2}{3}x - 4$ D. $y = -\frac{3}{2}x - 8$

23. An experiment consists of tossing 2 fair coins, A and B. Find the probability that both coins will land the same way

A. $\frac{1}{8}$ B. $\frac{1}{2}$ C. $\frac{1}{4}$ D. $\frac{3}{4}$

24. What is the solution of the system $\begin{cases} y = -2x + 5 \\ y = x - 4 \end{cases}$

A. $(3, -1)$ B. $(-3, -1)$
C. $(-1, -3)$ D. $(-1, 3)$

25. Which of the given lengths are the lengths of the sides a triangle?

A. 3, 4, 7 B. 3, 4, 6 C. 2, 3, 6 D. 3, 3, 6



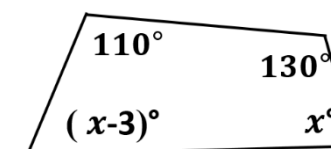
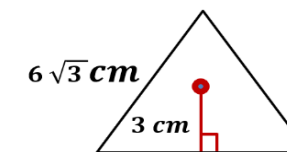
Choose the correct answer: (2 marks for each right answer)

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A. 3 , 4 , 7 B. 3 , 4 , 6 C. 2 , 3 , 6 D. 3 , 3 , 6
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A. 12 B. 11
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- What is the solution of the equation $2x(x+2) = 0$?
A. 0 and 2 B. 0 and -2 C. 2 and 2 D. -2 and 2
- Find the slope of the line that passes through each pair of points (2 , 6) and (0 , 2)
A. 2 B. -4 C. -2 D. 4
- A marble is randomly drawn out of a bag and then replaced. The table shows the results after 25 draws. Estimate the probability of drawing a yellow marble.

Outcome	Red	Blue	Yellow	Green
Draws	6	7	8	4

- For what values of x the value of $\sqrt{x-19}$ is a real number ?
A. $x \geq -19$ B. $x \leq -19$ C. $x \geq 19$ D. $x \leq 19$
- Between which numbers the positive solution of $x^2 = 20$ lies ?
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A. $-\frac{1}{2}$ B. $\frac{1}{2}$ C. $-\frac{1}{4}$ D. -1
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A. $\frac{\sqrt{2}}{3}$ B. $2\sqrt{2}$ C. $\frac{2\sqrt{2}}{3}$ D. $\frac{3\sqrt{2}}{2}$
- is used to two show how two related sets of data change over time
A. double -line graph B. Double bar graph
C. Frequency table D. Histogram
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A. $\frac{1}{8}$ B. $\frac{1}{2}$ C. $\frac{1}{4}$ D. $\frac{3}{4}$
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A. $x^2 - 10x - 25$ B. $x^2 + 10x + 25$
C. $x^2 - 10x + 25$ D. $x^2 - 25$
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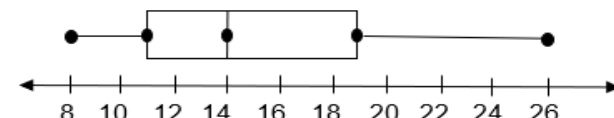
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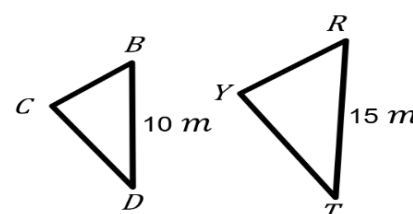
- A. 12m B. 14 m C. 13 m D. 11m

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- A. 30° B. 36° C. 45° D. 60°

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49. Which name does not apply to the number 7

- A. Natural B. Rational C. Integer D. Irrational

50. Which of the following represents the complete factorization of the expression: $n(y + 4) - 5(y + 4)$

- A. $(y - 4)(5n + 4)$ B. $(y + 4)(n + 5)$
C. $(y + 4)(n - 5)$ D. $(y - 4)(n + 5)$



Time: 2:30 hours

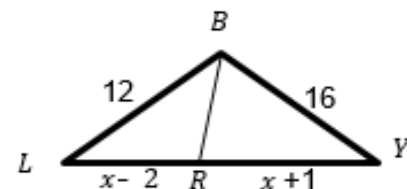
Fingerprint



Choose the correct answer: (2 marks for each right answer)

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- A.12 B. 11
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2. The length of the side of a square is x meters and the area of this square is $169 m^2$ Find x

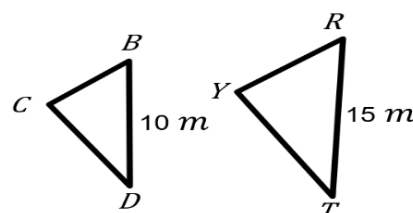
- A. $12m$ B. $14 m$ C. $13 m$ D. $11m$

3. Simplify $\left(\frac{2}{5}\right)^{-3}$

- A. $\frac{8}{125}$ B. $-\frac{8}{125}$ C. $\frac{125}{8}$ D. $-\frac{125}{8}$

4. $\triangle BCD \sim \triangle RYT$ and the area of $\triangle BCD$ is $24m^2$. what is the area of $\triangle RYT$

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6. What is the solution of the system $\begin{cases} y = -2x + 5 \\ y = x - 4 \end{cases}$

- A. $(3, -1)$ B. $(-3, -1)$
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7. Simplify $(x^2y^3)^4$

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8. Find the coordinate of the midpoint of $\overline{BC}$ if where $B(4, -5)$ and $C(2, 1)$

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- A. $11\sqrt{3}$ B. $13\sqrt{3}$ C. $11\sqrt{5}$ D. $13\sqrt{5}$

11. Simplify $(x-5)^2$

- A. $x^2 - 10x - 25$ B. $x^2 + 10x + 25$
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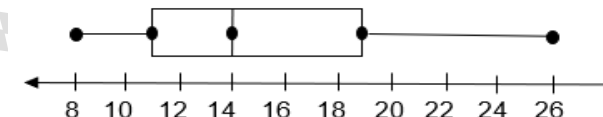
- A. $(y-4)(5n+4)$ B. $(y+4)(n+5)$
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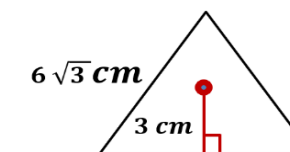


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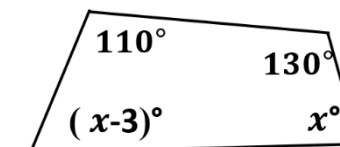
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A. 0 and 2 B. 0 and -2 C. 2 and 2 D. -2 and 2



Choose the correct answer: (2 marks for each right answer)

- Find the perimeter of a regular 7 - gon with side length 8 cm
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A. $(y-4)(5n+4)$ B. $(y+4)(n+5)$
C. $(y+4)(n-5)$ D. $(y-4)(n+5)$
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A. x^2y^3 B. x^8y^{12} C. x^6y^7 D. x^2y
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 - Which of the following is a non-linear equation ?
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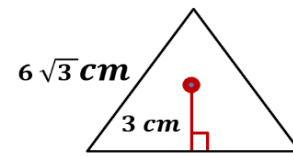
26. What is the area of the regular triangle shown opposite?

A. $27\sqrt{3} \text{ cm}^2$

B. $21\sqrt{3} \text{ cm}^2$

C. $18\sqrt{3} \text{ cm}^2$

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27. What is the slope of the line $6x - 2y = -21$

A. -3

B. -6

C. 6

D. 3

28. What is the simplest form of the expression $4\sqrt{12} + \sqrt{75}$

A. $11\sqrt{3}$

B. $13\sqrt{3}$

C. $11\sqrt{5}$

D. $13\sqrt{5}$

29. Which of the following points does the line with the equation $y - 2 = -3(x + 6)$ pass through?

A. $(-6, -2)$

B. $(-6, 2)$

C. $(6, -2)$

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30. Which name does not apply to the number 7

A. Natural

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A. $\frac{1}{8}$

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

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

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

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D. $3, 3, 6$

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39. $\triangle BCD \sim \triangle RYT$ and the area of $\triangle BCD$ is $24m^2$.

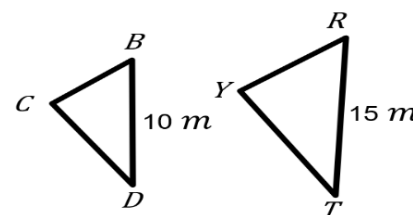
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A. $54m^2$

B. $36m^2$

C. $29m^2$

D. $16m^2$



40. If the similarity ratio of two triangles is $\frac{b}{c}$, then the ratio of their perimeters is

A. $\frac{b}{c^2}$

B. $(\frac{b}{c})^2$

C. $\frac{c}{b}$

D. $\frac{b}{c}$

41. If 6, 8, 12 and 15, 20, x are the lengths of the corresponding sides of two similar triangles, what is the value of x

A. 6

B. 18

C. 24

D. 30

42. Which measure of central tendency has the smallest value for the data set: 11, 11, 4, 15, 18, 22, 24, 7

A. Median

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43. Find the slope of the line that passes through each pair of points $(2, 6)$ and $(0, 2)$

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44. Simplify $(\frac{2}{5})^{-3}$

A. $\frac{8}{125}$

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A. $\frac{1}{12}$

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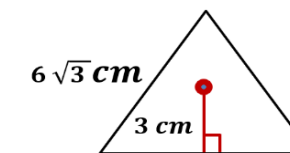
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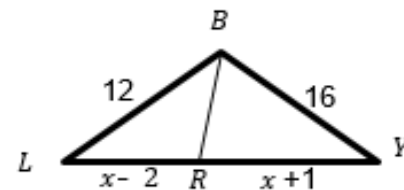
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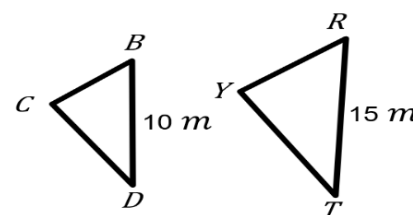
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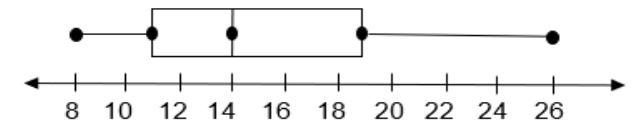


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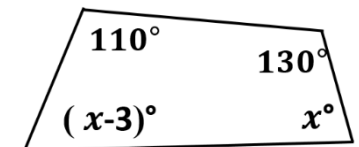
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- A. $-2 < y < 2$ B. $0 < y < 4$ C. $-4 < y < 0$ D. $-2 < y < 0$



Choose the correct answer: (2 marks for each right answer)

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5. Which of the given lengths are the lengths of the sides a triangle ?
A. $3, 4, 7$ B. $3, 4, 6$ C. $2, 3, 6$ D. $3, 3, 6$

6. The length of the side of a square is x meters and the area of this square is $169 m^2$ Find x
A. $12m$ B. $14 m$ C. $13 m$ D. $11m$

7. Rolling 2 fair number cubes and getting both a 1 and a 6 are two events
A. Independent B. Dependent
C. Mutually exclusive D. All answers are incorrect

8. Which of the following represents the complete factorization of the expression: $n(y + 4) - 5(y + 4)$
A. $(y - 4)(5n + 4)$ B. $(y + 4)(n + 5)$
C. $(y + 4)(n - 5)$ D. $(y - 4)(n + 5)$

9. Simplify $(x^2y^3)^4$
A. x^2y^3 B. x^8y^{12} C. x^6y^7 D. x^2y

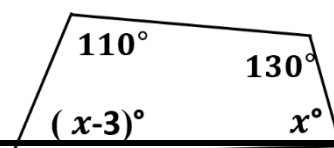
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11. Which name does not apply to the number 7
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12. A sports announcer states that a Basil has an 84% chance of winning a race Give the probability , as a fraction in lowest terms, that Basil will NOT win the race
A. 0.16 B. 84 C. 0.84 D. 16

13. Find the value of x shown in the figure .

- A. 55.5° B. 61.5°
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14. If $6, 8, 12$ and $15, 20, x$ are the lengths of the corresponding sides of two similar triangles, what is the value of x

- A. 6 B. 18 C. 24 D. 30

15. A marble is randomly drawn out of a bag and then replaced. The table shows the results after 25 draws. Estimate the probability of drawing a yellow marble.

- A. 0.8 B. 0.32
C. 0.34 D. 0.4

Outcome	Red	Blue	Yellow	Green
Draws	6	7	8	4

16. For what values of x the value of $\sqrt{x - 19}$ is a real number ?

- A. $x \geq -19$ B. $x \leq -19$ C. $x \geq 19$ D. $x \leq 19$

17. Sarah has taken three tests worth 100 points each. Her scores are 60, 90, and 86 she has one test left to take. What score must she get on her last test to get an average of 80
A. 82 B. 84 C. 80 D. 86

18. What is the solution of the inequality $|2 - y| < 2$

- A. $-2 < y < 2$ B. $0 < y < 4$ C. $-4 < y < 0$ D. $-2 < y < 0$

19. Find the perimeter of a regular 7 - gon with side length $8 cm$

- A. $64 cm$ B. $54 cm$ C. $56 cm$ D. $49 cm$

20. A bag contains 5 blue balls and 8 green balls. How many yellow balls should be added so that the probability of drawing a green ball is $\frac{2}{5}$

- A. 13 B. 8 C. 5 D. 7

21. What is the y-intercept of the line $5x - 10y = 30$

- A. $(6, 0)$ B. $(0, \frac{1}{2})$ C. $(0, -3)$ D. $(0, -6)$

22. What is the simplest form of $\sqrt{3} \times \sqrt{15}$

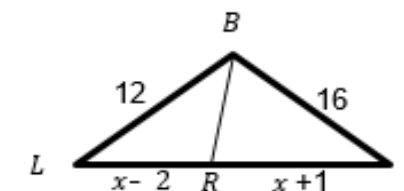
- A. $3\sqrt{5}$ B. $5\sqrt{3}$ C. 45 D. $3\sqrt{15}$

23. Which of the following points does the line with the equation $y - 2 = -3(x + 6)$ pass through ?

- A. $(-6, -2)$ B. $(-6, 2)$
C. $(6, -2)$ D. $(6, 2)$

24. Find the length of $\overline{LR}$ in the figure shown .

- A. 12 B. 11
C. 9 D. 16



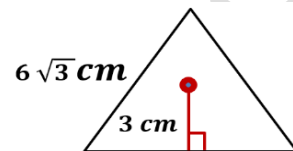
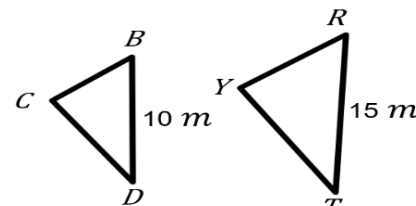
25. Between which numbers the positive solution of $x^2 = 20$ lies ?

- A. 4 and 5 B. 5 and 6 C. 6 and 7 D. 7 and 8

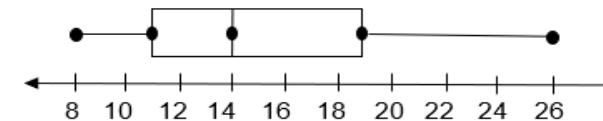
26. What is the solution of the system $\begin{cases} y = -2x + 5 \\ y = x - 4 \end{cases}$

- A. $(3, -1)$ B. $(-3, -1)$
C. $(-1, -3)$ D. $(-1, 3)$

27. Which of the following equations represents a direct variation between x and y
 A. $y = \frac{3}{x}$ B. $y = 4x$ C. $y = 3x^2$ D. $y = 4 + x$
28. What is the Solution of the inequality $6x + 4 > 5x - 2$
 A. $x > -4$ B. $x > -6$ C. $x > 6$ D. $x > 4$
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 A. $y = 2x + 4$ B. $y = -3x + 6$
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30. If the similarity ratio of two triangles is $\frac{b}{c}$, then the ratio of their perimeters is
 A. $\frac{b}{c^2}$ B. $(\frac{b}{c})^2$ C. $\frac{c}{b}$ D. $\frac{b}{c}$
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35. What is the solution of the equation $2x(x + 2) = 0$?
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 A. $\frac{1}{8}$ B. $\frac{1}{2}$ C. $\frac{1}{4}$ D. $\frac{3}{4}$
37. Which line is perpendicular to the line $y = \frac{2}{3}x - 4$
 A. $y = \frac{3}{2}x - 4$ B. $Y = -\frac{2}{3}x - 4$
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38. Find the coordinate of the midpoint of $\overline{BC}$ if where $B (4,-5)$ and $C (2, 1)$
 A. (6 , -4) B. (3 , -2) C. (4 , 2) D. (-5 , 1)
39. What is the slope of the line $6x - 2y = -21$
 A. -3 B. -6 C. 6 D. 3



40. What is the solution of the equation $x^2 - 8x = 9$
 A. -1 and 9 B. 1 and - 9 C. 1 and 9 D. -1 and - 9
41. What is the simplest form of the expression $4\sqrt{12} + \sqrt{75}$
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42. Find the missing term in the factorization: $15x - 25x^2 = 5x(3 - \square)$
 A. $5x$ B. $-5x$ C. $-5x^2$ D. $5x^2$
43. After rolling two fair number cubes, find the probability of getting a total sun of 10
 A. $\frac{1}{12}$ B. $\frac{1}{6}$ C. $\frac{3}{10}$ D. $\frac{1}{9}$
44. Which expression represents the rationalization of the denominator of $\frac{4}{3\sqrt{2}}$
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45. Factor $1 - 4x^2$
 A. $(1 + x)(1 - x)$ B. $(1 - 2x)(1 + x)$
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46. Which expression is equivalent to $25x^2 - 20x + 4$
 A. $(5x + 2)^2$ B. $(x + 2)^2$ C. $(x - 2)^2$ D. $(5x - 2)^2$
47. Find the first quartile for the data set shown in the box-and-whisker plot
 A. 11 B. 19 C. 14 D. 46
48. Which of the following is a non-linear equation ?
 A. $y = -7$ B. $y = 4x - 3$
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49. Find the slope of the line that passes through each pair of points (2 ,6) and (0 ,2)
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50. Which number is not a solution of $\frac{2}{3}x \geq -\frac{1}{2}$
 A. $-\frac{1}{2}$ B. $\frac{1}{2}$ C. $-\frac{1}{4}$ D. -1





Choose the correct answer: (2 marks for each right answer)

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- A. $\frac{b}{c^2}$ B. $(\frac{b}{c})^2$ C. $\frac{c}{b}$ D. $\frac{b}{c}$

2. For what values of x the value of $\sqrt{x-19}$ is a real number ?

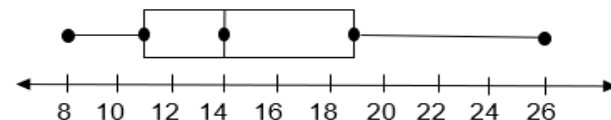
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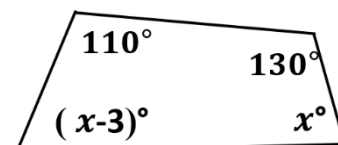
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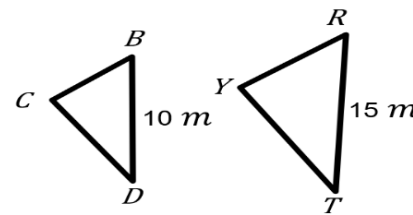
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C. 45
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35. Find the measure of each exterior angle of a regular octagon .

- A. 30°
B. 36°
C. 45°
D. 60°

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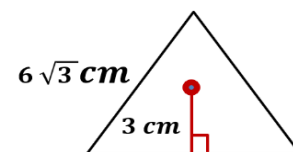
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C. 2, 3, 6
D. 3, 3, 6

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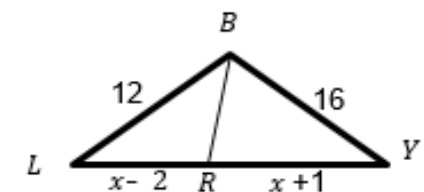
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- A. $-\frac{1}{2}$
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- A. 12
B. 11
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50. Which line is perpendicular to the line $y = \frac{2}{3}x - 4$

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C. $Y = \frac{2}{3}x - 4$
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