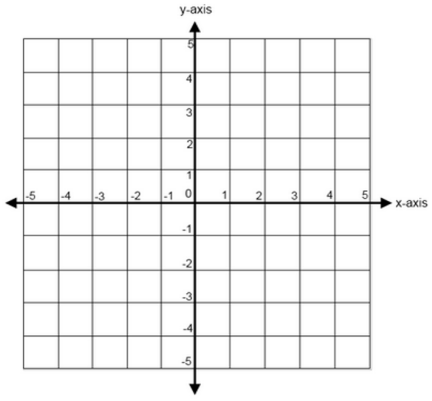
Test Name: Math 8 FInal Exam 2024
Test ID: 3435325
Date: 06/16/2024

1.

1.) Which is the image of (2, 3) under the translation of 5 units left and 2 units down?



(A) (-5, -2)

(B) (3, 5)

(C) (-3, 1)

(D) (3, -1)

A. A

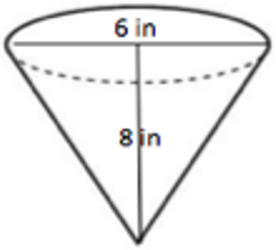
B. B

C. C

D. D

2.

2.) Find the volume of the cone. $V = \frac{1}{3}\pi r^2 h$



(A) 72π in^3

(B) 8π in^3

(C) 48π in^3

(D) 24π in^3

A. A

B. B

C. C

D. D

3.

3.) What is the value of x in the equation $15x - 10 - 10x = -35$?

(A) 1

(B) 0.6

(C) -5

(D) -9

A. A

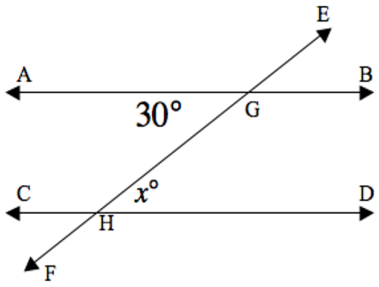
B. B

C. C

D. D

4.

4.) In the accompanying diagram, parallel lines AB and CD are intersected by transversal EF at points G and H, respectively, m$\angle AGH = 30°$, and m$\angle GHD = x$. What is the value of x?



(A) 30°

(B) 60°

(C) 150°

(D) 35°

A. A

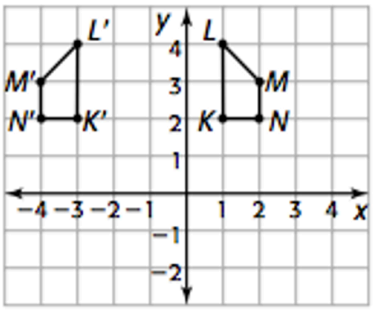
B. B

C. C

D. D

5.

5.) Describe how KLMN was transformed to produce K'L'M'N'.



(A) Rotation 90° counterclockwise around the origin

(B) Translation left 5 units

(C) Reflection over the x-axis, then a translation left 2 units

(D) Translation right 2 units, then reflection over the y-axis

A. A

B. B

C. C

D. D

6.

6.) Which describes the solutions to the equation? $4x + 28 = 4(x + 7)$

(A) There is no solution. The equation is never true.

(B) There is one solution to the equation.

(C) There are two solutions to the equation.

(D) There are infinitely many solutions. The equation is always true.

A. A

B. B

C. C

D. D

7.

7.) Simplify $\frac{5^{10}}{5^{6}}$.

(A) 5^{16}

(B) 5^{4}

(C) 1^{4}

(D) 1^{16}

A. A

B. B

C. C

D. D

8.

8.) Which ordered pair is a solution of the system shown?

$$2x + y = 10$$
$$3x - y = 5$$

(A) (3, 5)

(B) (1, 9)

(C) (3, 10)

(D) (3, 4)

A. A

B. B

C. C

D. D

9.

9.) What is the solution of the equation? $-2x - 6 + 4x = 7 + 2x + 3$

(A) No solution/Never true

(B) 2

(C) 4

(D) Infinite solutions/Always true

A. A

B. B

C. C

D. D

10.

10.) Which point best shows the location of $\sqrt{10}$ on the number line?

(A) Point A

(B) Point B

(C) Point C

(D) Point D

A. A

B. B

C. C

D. D

11.

11.) Simplify $\left(5^{8}\right)\left(5^{2}\right)$

(A) 5^{16}

(B) 5^{10}

(C) 5^{6}

(D) 5^{4}

A. A

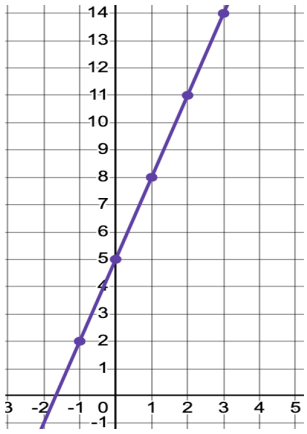
B. B

C. C

D. D

12.

12.) What is the equation of the graphed line?



(A) $y = 3x + 4$

(B) $y = 3x + 5$

(C) $y = \frac{1}{3}x - 4$

(D) $y = \frac{1}{3}x - 5$

A. A

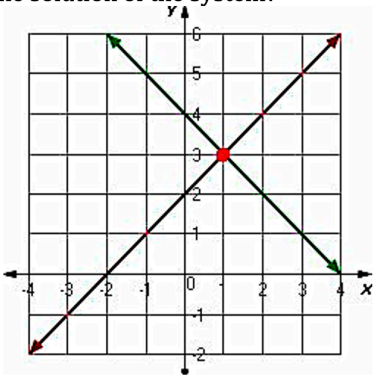
B. B

C. C

D. D

13.

13.) What is the solution of the system?



(A) (3,1)

(B) (0,2)

(C) (0,4)

(D) (1,3)

A. A

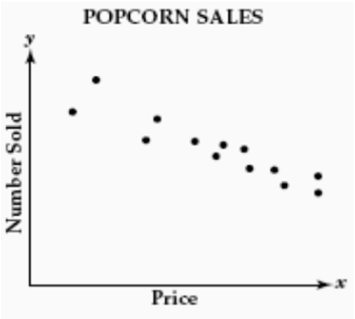
B. B

C. C

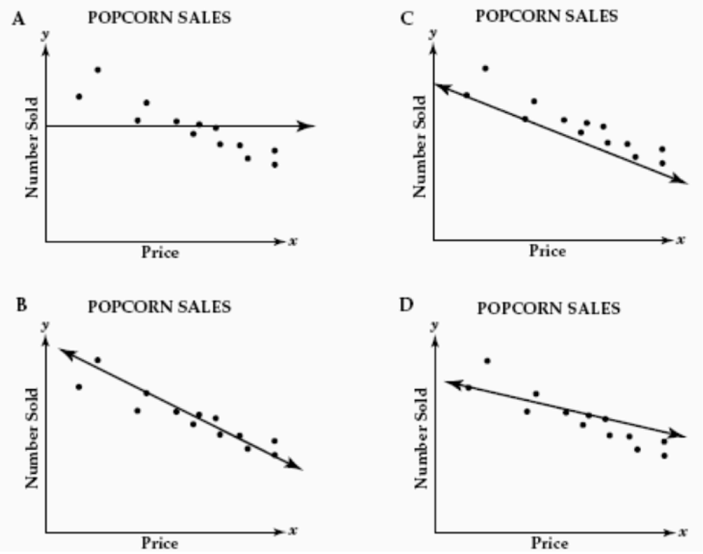
D. D

14.

14.) This scatter plot shows the relationship between the number of bags of popcorn sold, and the price of popcorn per bag.



Which scatter plot below shows the most accurate trend line to model this data?



A. A

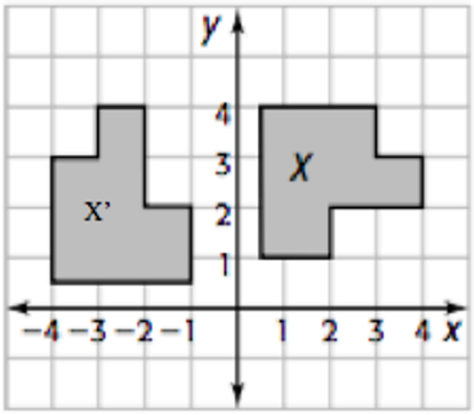
B. B

C. C

D. D

15.

15.) Identify the transformation that takes figure X to figure X'.



(A) Translation left

(B) Rotation clockwise 90 degrees

(C) Reflection in the y-axis

(D) Rotation counterclockwise 90 degrees

A. A

B. B

C. C

D. D

16.

16.) Based on these results, if a team practices 4 hours per week next season, which is the best estimate of the number of debates the team can expect to win.

(A) 16

(B) 20

(C) 12

(D) 1

A. A

B. B

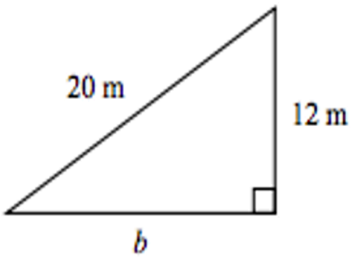
C. C

D. D

17.

17.) Find the length of the unknown side.

Pythagorean Theorem: $a^2 + b^2 = c^2$



(A) 23.3 m

(B) 256 m

(C) 16 m

(D) 8 m

A. A

B. B

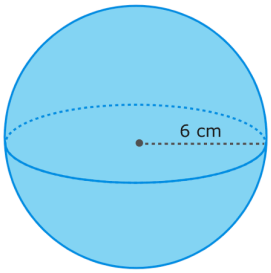
C. C

D. D

18.

18.) Find the volume of the sphere in terms of pi.

$$V = \frac{4}{3}\pi r^3$$



(A) 48π cm^3

(B) 288π cm^3

(C) 150.72 cm^3

(D) 288 cm^3

A. A

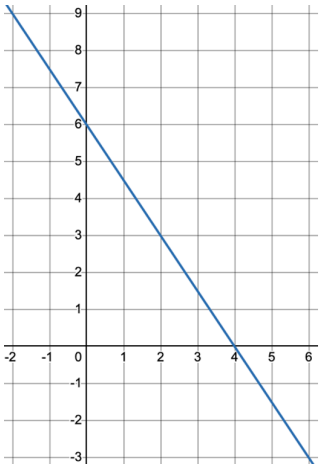
B. B

C. C

D. D

19.

19.) What is the initial value (y-intercept) of this line?



(A) 6

(B) $\frac{-3}{2}$

(C) 4

(D) $\frac{-2}{3}$

A. A

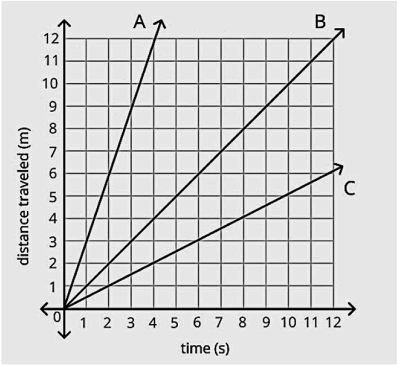
B. B

C. C

D. D

20.

20.) Three toy cars race down a straight path. The distance each car traveled over time is shown in the graph.



Which statement about the toy cars is **false**?

(A) Car A traveled at the fastest speed.

(B) Car B traveled at a rate of one meter per second.

(C) Car C traveled 3 meters in 6 seconds.

(D) Cars A and B both traveled 12 meters in the same amount of time.

A. A

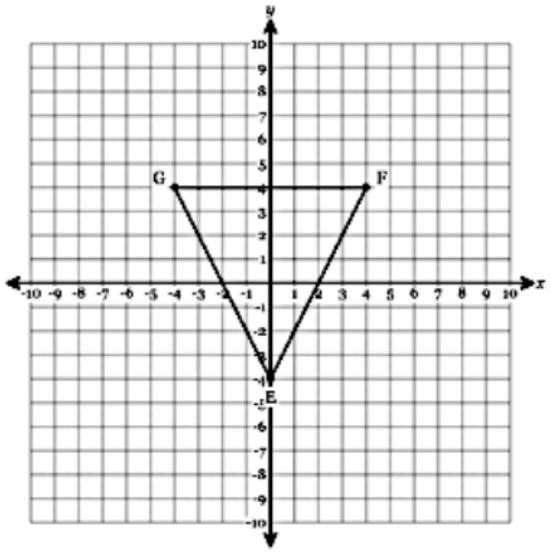
B. B

C. C

D. D

21.

21.) Point F dilated with a scale factor of 2. Which ordered pair would show the image of F?



(A) (8, 4)

(B) $\left(\frac{-1}{2}, \frac{-1}{4}\right)$

(C) $\left(\frac{1}{2}, \frac{1}{2}\right)$

(D) (8, 8)

A. A

B. B

C. C

D. D

22.

22.) Which equation can be combined with the equation 2y = 4x – 6 to create a system of equations that has no solution?

(A) $y = 2x - 3$

(B) $y = \frac{1}{2}x - 6$

(C) $y = 4x + 8$

(D) $y = 2x + 10$

A. A

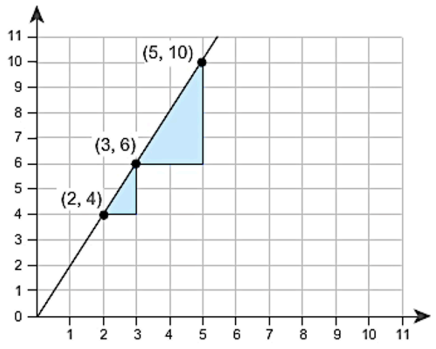
B. B

C. C

D. D

23.

23.) Two slope triangles are drawn on the graphed line. What is the slope of this line?



(A) 2

(B) ½

(C) 4

(D) ¼

A. A

B. B

C. C

D. D

24.

24.) What is the solution of the system of equations?

$$y = 4x - 5$$
$$2x + y = 25$$

(A) (10,25)

(B) (5,15)

(C) (5,20)

(D) No solution

A. A

B. B

C. C

D. D

25.

25.) Nylah is raising money for her school by selling candy. The amount of money, A, that she needs to reach for sales goal depends on the number of bags, b, that she sells. This is represented by the equation A = 5b + 100. What does 5 represent in the equation?

(A) Price of each bag of candy

(B) Nylah's sales goal

(C) Number of bags sold

(D) Number of bags to sell

A. A

B. B

C. C

D. D

26.

26.) Which number could complete the table so that the relationship **is a function**?

X	Y
2	80
4	95
3	88
	82

(A) 1

(B) 2

(C) 3

(D) 4

A. A

B. B

C. C

D. D

27.

27.) Which statement below accurately describes the fraction $3\frac{14}{99}$?

(A) This number is rational because as a decimal it terminates (ends).

(B) This number is rational because as a decimal it repeats.

(C) This number is irrational because as a decimal it is infinite (goes on forever).

(D) This number is irrational because it is equivalent to pi (π).

A. A

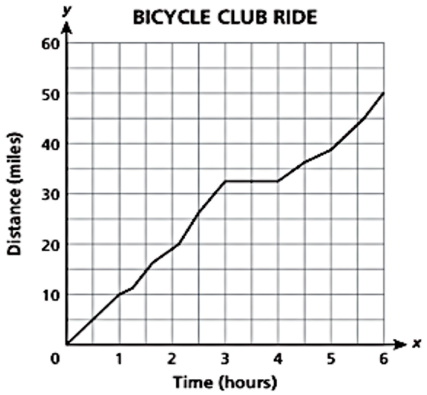
B. B

C. C

D. D

28.

28.) A bicycle club went on a six-hour ride. The graph below shows the relationship between the number of hours spent on the trails and the number of miles traveled.



Which statement best represents the information provided by graph?

(A) The club members rode at a constant speed for the entire ride.

(B) The number of miles traveled increased continuously.

(C) The club members stopped for a rest during their ride.

(D) The number of miles traveled increased some of time and decreased some of the time.

A. A

B. B

C. C

D. D

29.

29.) Which expression is equivalent to $4^{7} \cdot 4^{-5}$?

(A) 4^{2}

(B) 4^{12}

(C) 4^{-2}

(D) 4^{-35}

A. A

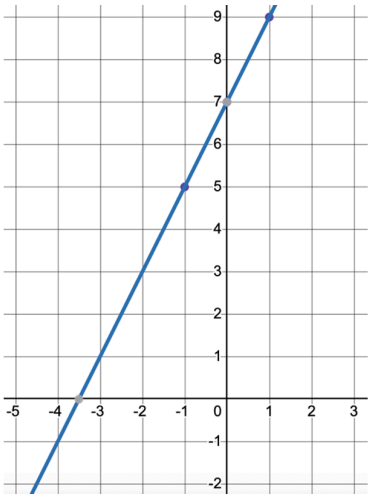
B. B

C. C

D. D

30.

30.) The graph below represents a linear function.



Which function has a **greater slope** and a **greater y-intercept** than the linear function represented in the graph?

(A) $y = 2x + 7$

(B) $y = 3x + 5$

(C) $y = 4x + 8$

(D) $y = 1x + 3$

A. A

B. B

C. C

D. D

31.

31.) Which table represents a linear function?

Table A

x	y
10	5
13	7
16	10
19	14

Table B

x	y
2	15
4	20
6	25
8	30

(A) Table A

(B) Table B

(C) Both Tables

(D) Neither Table

A. A

B. B

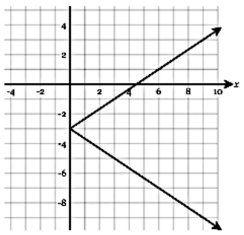
C. C

D. D

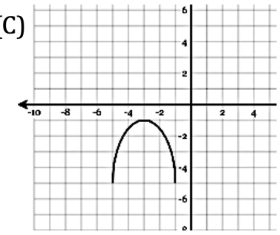
32.

32.) Which graphed relation is **not** a function?

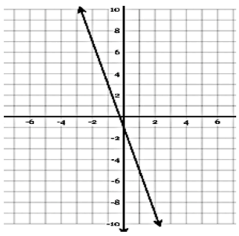
(A)



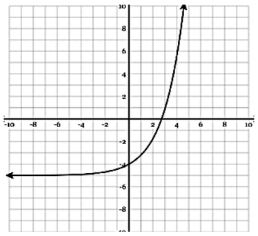
(C)



(B)



(D)



A. A

B. B

C. C

D. D

33.

33.) Which number is irrational?

(A) $\sqrt{23}$

(B) $\sqrt{16}$

(C) 2.3

(D) $0.\overline{5}$

A. A

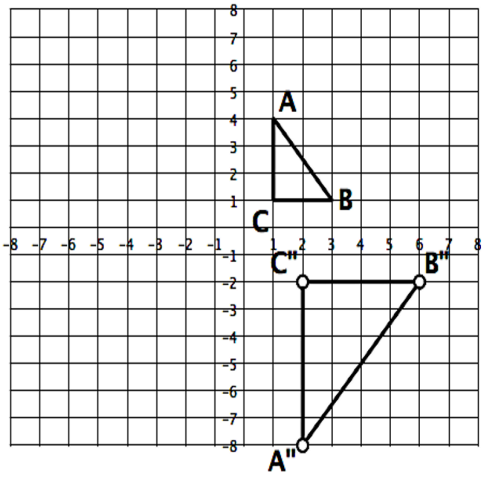
B. B

C. C

D. D

34.

34.) Which sequence of transformations takes figure ABC to figure A''B''C''?



(A) 90° rotation around the origin, followed by a reflection across y-axis

(B) Reflection over the x-axis, followed by a translation 1 unit right

(C) Reflection across the x-axis followed by a dilation with a scale factor of 2

(D) Reflection across the x-axis followed by a dilation with a scale factor of ½

A. A

B. B

C. C

D. D

35.

35.) Which equation represents a **linear** function?

(A) $y = \frac{4}{x} + 1$

(B) $y = \sqrt[3]{x+1}$

(C) $y = x^2 + 2$

(D) $y = \frac{-2}{3}x - 1$

A. A

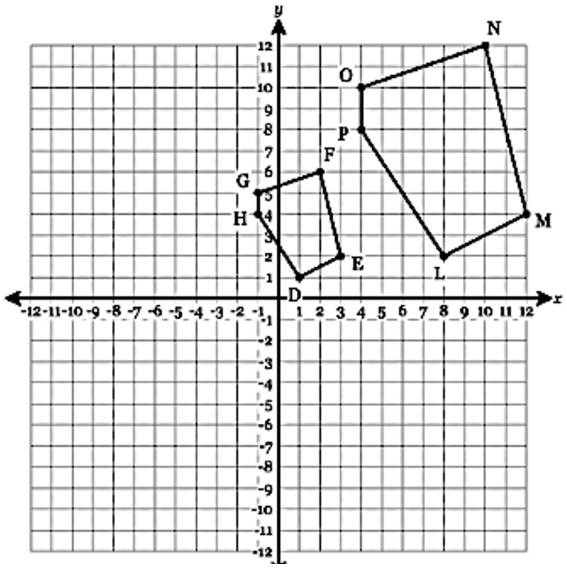
B. B

C. C

D. D

36.

36.) A sequence of transformations was applied from figure DEFGH to create figure LMNOP. Which of the following statements is true?



(A) DEFGH is congruent to LMNOP.

(B) DEFGH is similar to LMNOP.

(C) DEFGH and LMNOP are similar and congruent.

(D) DEFGH and LMNOP are neither similar nor congruent.

A. A

B. B

C. C

D. D

37.

37.) Use $a^2 + b^2 = c^2$ to determine which of these sets of sides would form a right triangle. All measurements are in meters.

(A) 6, 8, 10

(B) 10, 12, 22

(C) 5, 7, 8

(D) 2, 3, 5

A. A

B. B

C. C

D. D

38.

38.) Rebecca played several games of cards with her brother. She made a scatter plot showing how many minutes each game lasted and how many points she scored during that game.

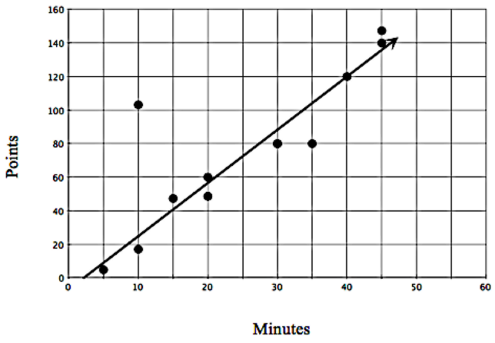
Which describes the correlation of the scatter plot?

(A) Negative

(B) No Correlation

(C) Positive

(D) Nonlinear Correlation



A. A

B. B

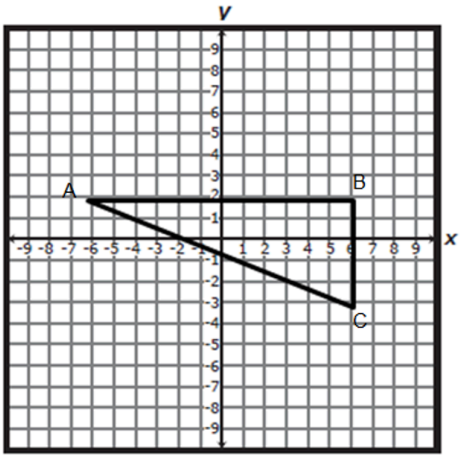
C. C

D. D

39.

39.) Right triangle ABC is graphed below. Use the Pythagorean Theorem to find the length of the hypotenuse, side AC.

Pythagorean Theorem: $a^2 + b^2 = c^2$



(A) AC has a length of 17 units.

(B) AC has a length of 13 units.

(C) AC has a length of 12 units.

(D) AC has a length of 11 units.

A. A

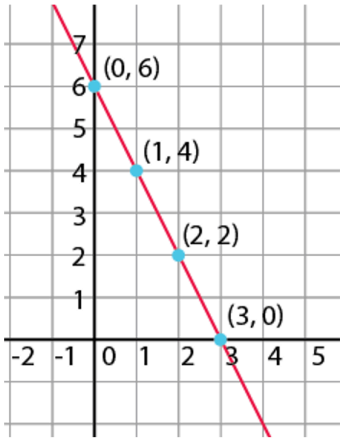
B. B

C. C

D. D

40.

40.) Which is the equation represents the graphed line?



(A) $y = 2x + 3$

(B) $y = -\frac{1}{2}x + 6$

(C) $y = -2x + 6$

(D) $y = -\frac{1}{2}x + 3$

A. A

B. B

C. C

D. D

41. Answer Question 41 in the test booklet

42. Answer Question 42 in your test booklet

43. Answer Question 43 in your test booklet

44. Answer Question 44 in your test booklet

45. Answer Question 45 in your test booklet

46. Answer Question 46 in your test booklet

47. Answer Question 47 in your test booklet

48. Answer Question 48 in your test booklet

You have reached the end of this section.