

Tennessee TCAP 2023
Grade 8 Math

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Tennessee Comprehensive Assessment Program

TCAP

Math Grade 8 Item Release



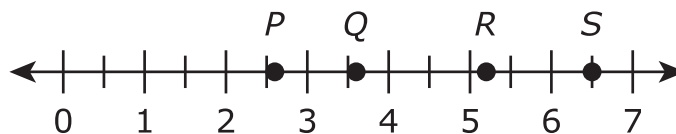
*Standards implemented from 2023-24 Tennessee Academic Standards for Math

00. Exactly how many numbers in the list shown are irrational?

$$\pi, -3.14, \sqrt{8}, \frac{5}{12}, -\sqrt{16}$$

- A.** 2
- B.** 3
- C.** 4
- D.** 5

00. The number line shows four points.



Which point is closest to the value of $\sqrt{13}$?

- A. *P*
- B. *Q*
- C. *R*
- D. *S*

00. What is the value of the expression?

$$4^3 \cdot 4^{-6}$$

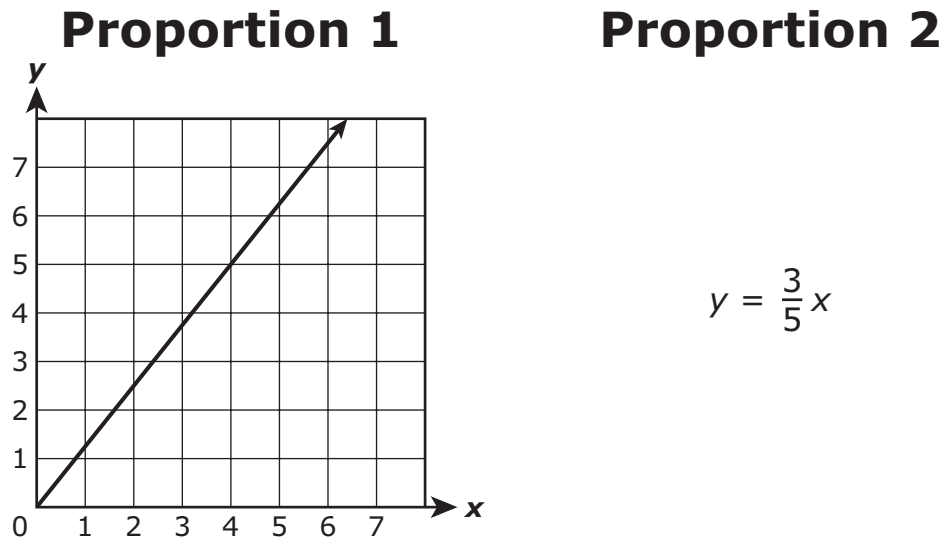
A. 64

B. $\frac{1}{64}$

C. $\frac{1}{16}$

D. 16

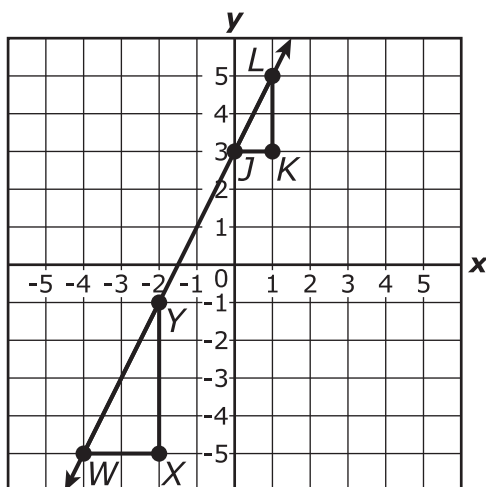
00. Two proportions are given.



Which statement is true about the proportions?

- A.** Proportion 1 has a greater slope.
- B.** Proportion 2 has a greater slope.
- C.** The slopes of the proportions are equal.
- D.** The proportions have an equal y value when $x = \frac{4}{3}$.

00. On the coordinate grid shown, triangles WXY and JKL are similar.



What is the slope of the line that passes through segment WL ?

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

00. Which equations have no real solution?

Select the **two** correct answers.

A. $3x - 5 = 3x + 5$

B. $3x - 5 = 3x - 5$

C. $3(x + 3) = 3(x - 2)$

D. $-4(x + 3) = -5(x + 2)$

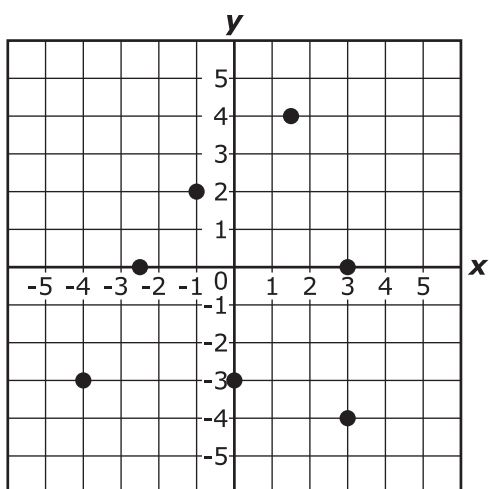
E. $5(x + 3) = -5(x + 2)$

00. What value of y satisfies the equation $\frac{2}{3}(y + 6) = \frac{1}{3}y + 7$?

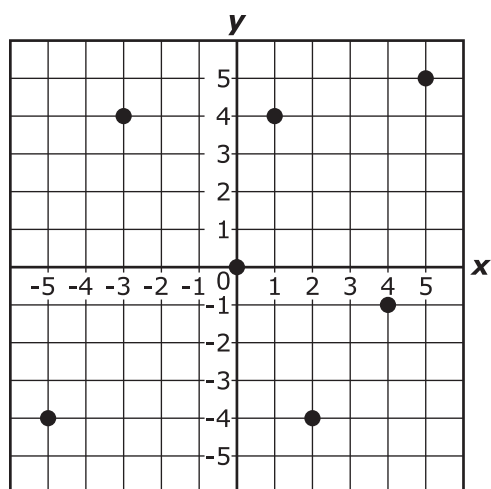
- A.** 1
- B.** 3
- C.** 6
- D.** 9

00. Which graph does **not** show y as a function of x ?

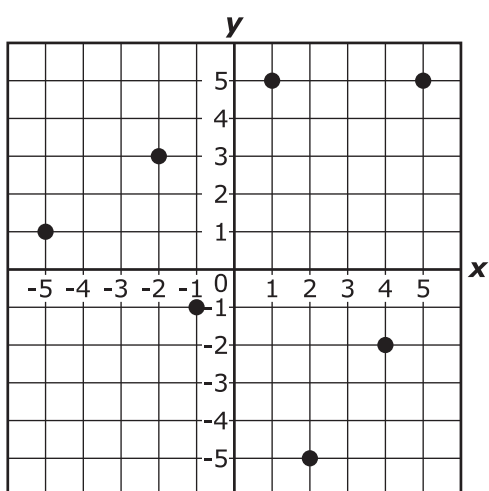
A.



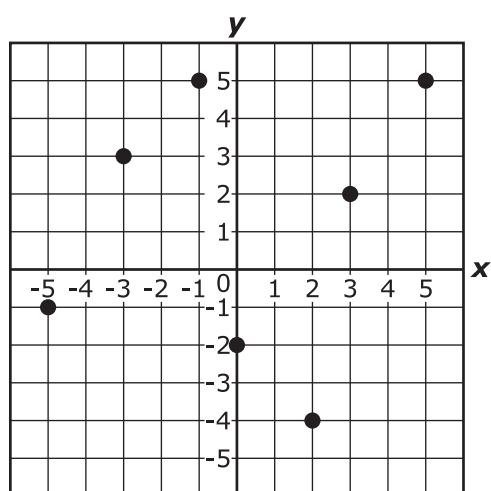
C.



B.



D.



- 00.** Bicycles are available for rent at a state park. The cost to rent a bicycle consists of an initial fee plus a charge for each hour. The table shows the total cost to rent a bicycle for a certain number of hours.

Bicycle Rental

Number of Hours, h	Total Cost (dollars), t
2	18
4	34
6	50
8	66
9	74

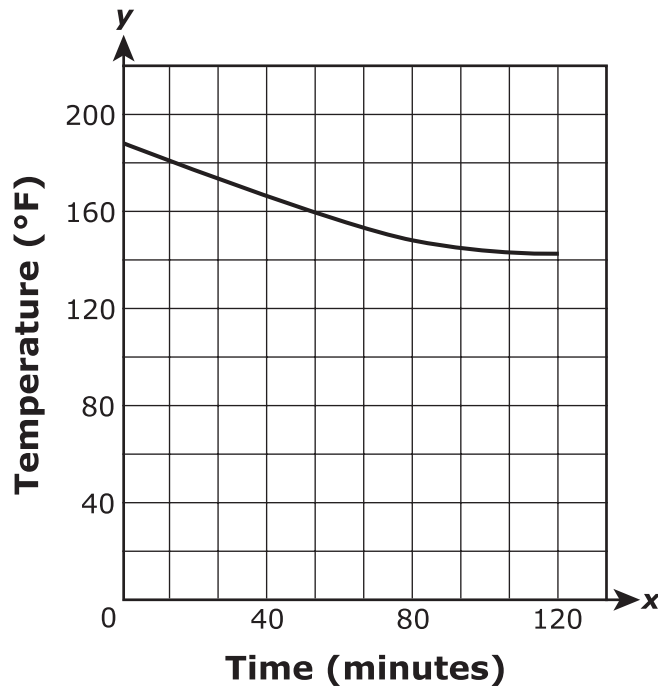
Which statements about the cost to rent a bicycle at this state park are true?

Select the **two** correct answers.

- A.** The initial fee to rent a bicycle is \$8.
- B.** The initial fee to rent a bicycle is \$2.
- C.** The hourly rate to rent a bicycle is \$8.
- D.** The hourly rate to rent a bicycle is \$2.
- E.** The total cost to rent a bicycle for 10 hours is \$80.

00. The graph shows the relationship between the temperature of a casserole, in degrees Fahrenheit, and the number of minutes since the casserole was removed from the oven.

Temperature vs. Time



Which terms **best** describe the relationship shown in the graph?

- A. increasing and linear
- B. decreasing and linear
- C. increasing and nonlinear
- D. decreasing and nonlinear

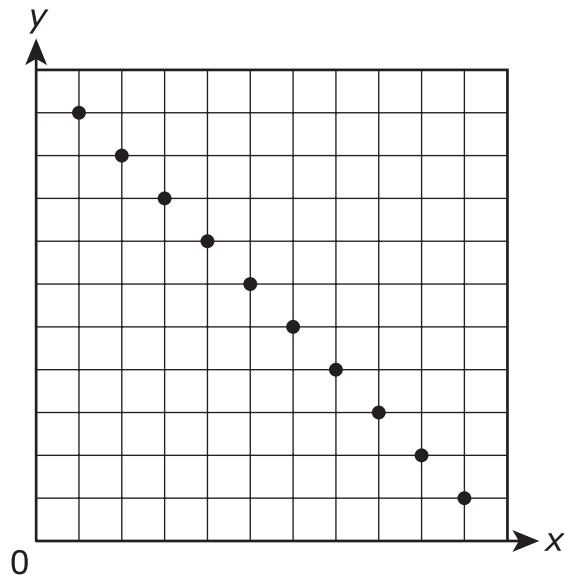
- 00.** A right triangle ABC has side lengths that are all whole numbers. Which sets could be the side lengths for this triangle?

Select the **three** correct answers.

- A.** 3, 4, 5
- B.** 5, 12, 13
- C.** 9, 16, 25
- D.** 10, 20, 30
- E.** 12, 35, 37

- 00.** Which value is closest to the distance between the points $(-1, 9)$ and $(5, 8)$ on a coordinate plane?
- A.** 2.6
 - B.** 6.1
 - C.** 10.4
 - D.** 17.5

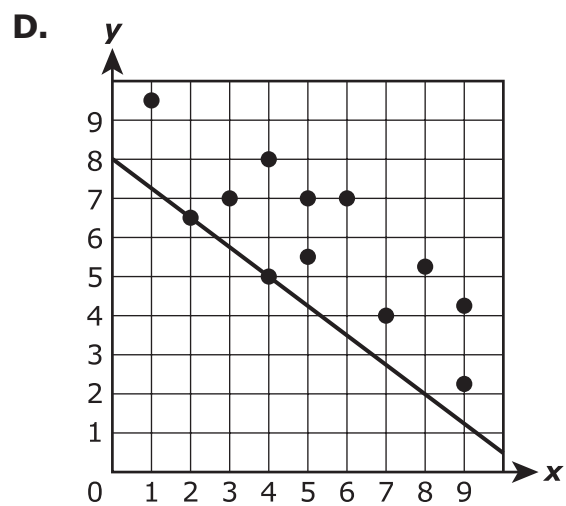
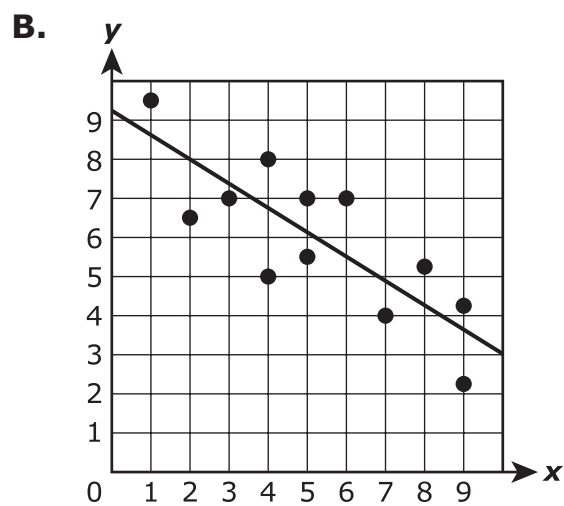
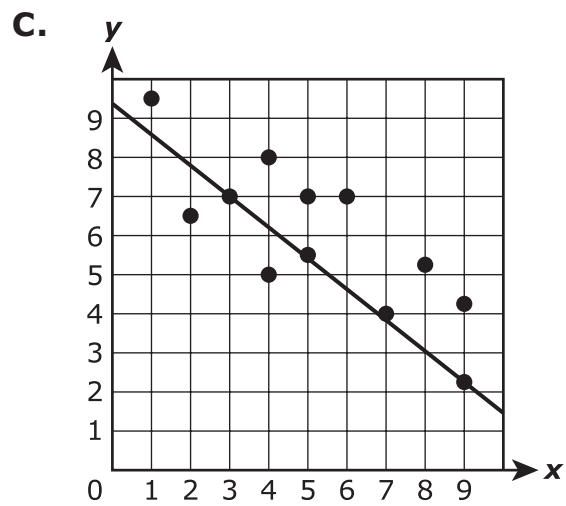
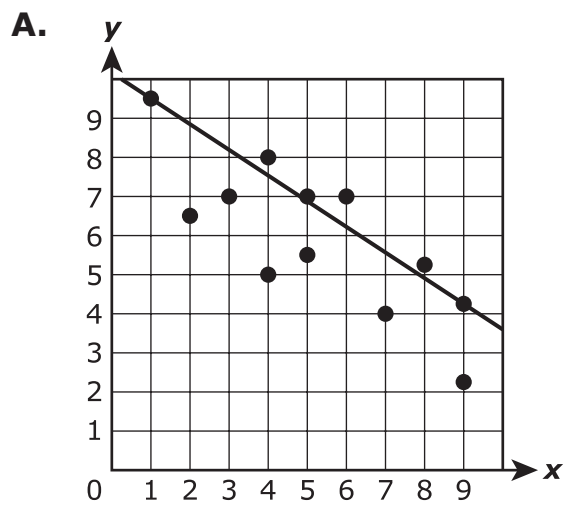
00. A scatter plot is shown.



Which situation **best** describes this scatter plot?

- A. the relationship between y , the number of employees at a shoe store and x , the number of shoes that are on sale
- B. the relationship between y , test scores of the students in Mr. Elizondo's class and x , the number of minutes they studied
- C. the relationship between y , the number of gallons of gasoline in a car with a full tank of gasoline and x , the number of miles the car has been driven
- D. the relationship between y , the number of gallons of water in a swimming pool and x , the number of minutes water is being poured into the pool

00. Which graph shows a line of best fit for the data?



- 00.** Four colored chips are in a bag. One chip is red, one chip is yellow, and two chips are blue. A chip is selected, put back in the bag, and then another chip is selected.

Which statements are true?

Select the **two** correct answers.

- A.** The probability of getting two red chips is 0.
- B.** The probability of getting two yellow chips is $\frac{1}{16}$.
- C.** The probability of getting two blue chips is $\frac{1}{2}$.
- D.** The probability of getting two blue chips is $\frac{1}{4}$.
- E.** The probability of getting a red and a blue, in either order, is $\frac{1}{16}$.

Metadata- Math

Items

Page Number	UIN	Grade	Item Type	Key	DOK	TN Standards	Calculator
1	TN0069383	8	MC	A	1	8.NS.A.1	N
2	T8M03S388	8	MC	B	2	8.NS.A.2	N
3	T8M03S239	8	MC	B	1	8.EE.A.1	N
4	T8M03S293	8	MC	A	2	8.EE.B.5	Y
5	T8M03S621	8	MC	C	1	8.EE.B.6	Y
6	TN0069331	8	MS	A,C	2	8.EE.C.7a	Y
7	T8M03S257	8	MC	D	1	8.EE.C.7b	Y
8	T8M03S500	8	MC	A	1	8.F.A.1	Y
9	TN0069398	8	MS	B,C	2	8.F.B.4	Y
10	T8M03S151	8	MC	D	1	8.F.B.5	N
11	TN0014602	8	MS	A,B,E	2	8.G.B.3	Y
12	TN0081291	8	MC	B	2	8.G.B.5	Y
13	TN0069333	8	MC	C	2	8.SP.A.1	N
14	T8M03S693	8	MC	B	2	8.SP.A.2	Y
15	TN942866	8	MS	B,D	3	8.SP.B.4a	Y

Metadata Definitions:

UIN	Unique letter/number code used to identify the item.
Grade	Grade level or Course.
Item Type	Indicates the type of item. MC= Multiple Choice; MS= Multiple Select; FIB = Fill-in-the-blank
Key	Correct answer.
DOK	Depth of Knowledge (cognitive complexity) is measured on a three-point scale. 1 = Recall or simple reproduction of information; 2 = Skills and concepts: comprehension and processing of text; 3 = Strategic thinking, prediction, elaboration.
TN Standards	Primary educational standard assessed.
Calculator	Y for items that permit calculator use.

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