

Tennessee TCAP 2021  
Grade 8 Math

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# Tennessee Comprehensive Assessment Program

# TCAP

## Math Grade 8 Item Release



**00.** What is the value of  $x$  in  $64 = x^3$ ?

**A.**  $-8$

**B.**  $-4$

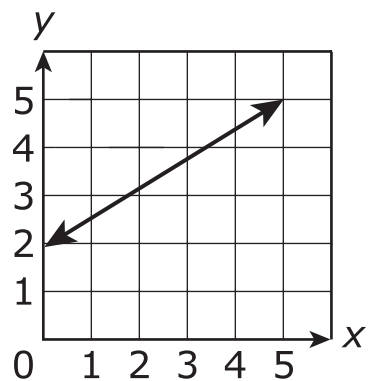
**C.**  $4$

**D.**  $8$

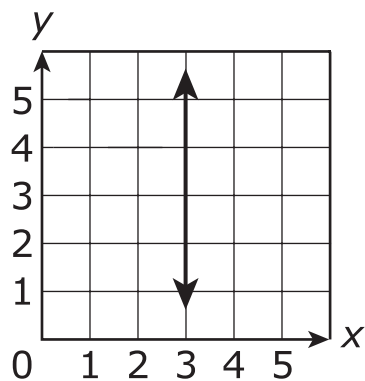
- 00.** Bob's living room floor is a rectangle that measures 9 feet by 12 feet. What is the diagonal distance, in feet, across the floor?
- A.** 13
  - B.** 15
  - C.** 16
  - D.** 21

00. Which graph represents a function?

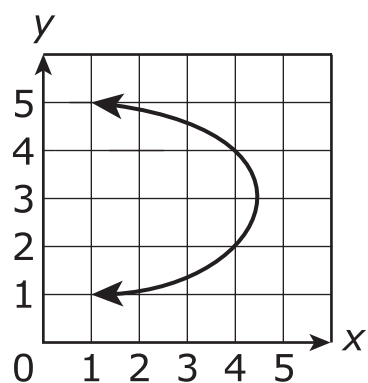
A.



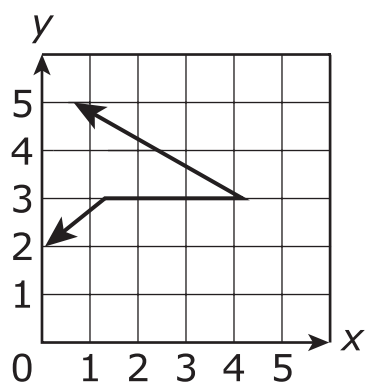
C.



B.



D.

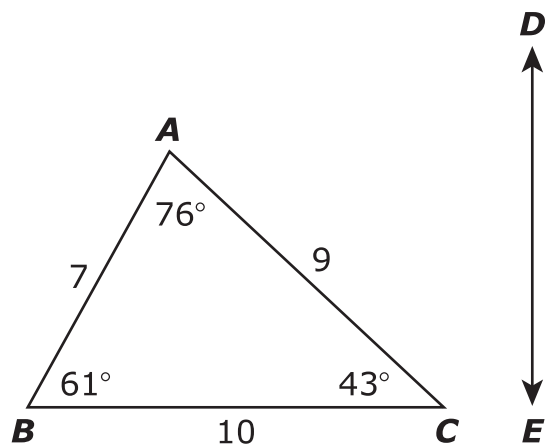


**00.** Which statement about the equation is true?

$$5(d + 11) = 2(d - 19)$$

- A.** The equation has precisely one solution.
- B.** The equation has precisely two solutions.
- C.** The equation has infinitely many solutions.
- D.** The equation has no solutions.

00. Yasmin reflects  $\triangle ABC$  over  $\overleftrightarrow{DE}$ . She labels the reflected triangle  $A'B'C'$ .



Which statement about  $\triangle A'B'C'$  is **not** true?

- A.  $m\angle A' = 76^\circ$
- B.  $m\angle C' = 43^\circ$
- C.  $m\overline{A'B'} = 7$
- D.  $m\overline{A'C'} = 10$

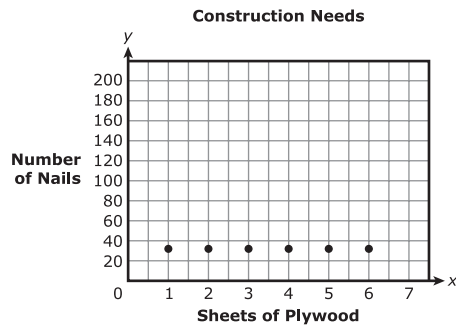
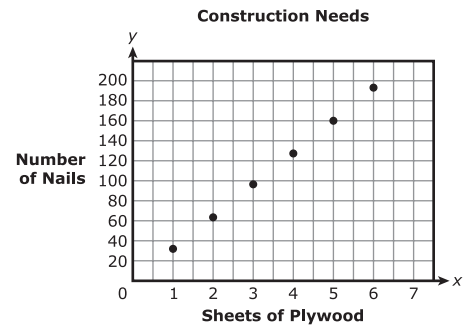
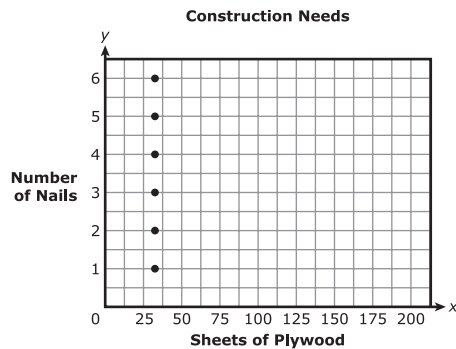
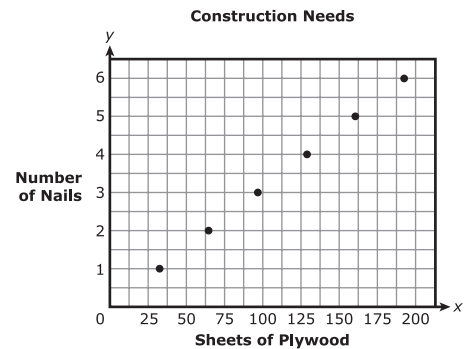
- 00.** Daisy estimated a certain expression to have a value of 300. Which of these expressions could be the one Daisy estimated?

Select the **two** that apply.

- A.**  $10\pi^2$
- B.**  $30\pi^2$
- C.**  $100\pi$
- D.**  $300\pi$
- E.**  $(5\pi)^2$
- F.**  $(10\pi)^2$



- 00.** A contractor is determining the amount of materials needed for the construction of a new building. He knows that he will use 32 nails for every sheet of plywood. Which graph represents the relationship between the number of sheets of plywood and the number of nails?

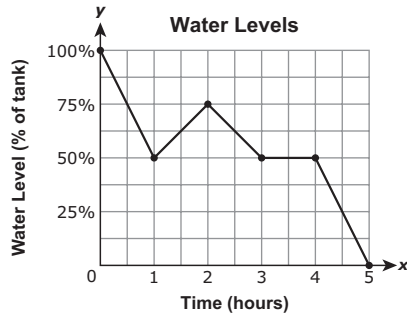
**A.****C.****B.****D.**

**00.** The water levels in a holding tank at a water treatment plant are continuously monitored and graphed. Over a 5-hour period, the water level had these properties:

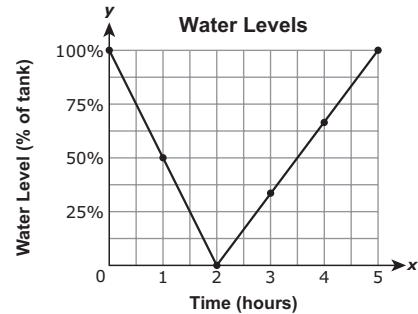
- The tank started full.
- The water level decreased at a constant rate during the first hour.
- The water level decreased at a slower rate during the second hour.
- The water level increased at a constant rate during the third hour.
- The water level remained the same during the fourth hour.
- The water level increased to full at a constant rate during the fifth hour.

Which graph represents the water level in the tank?

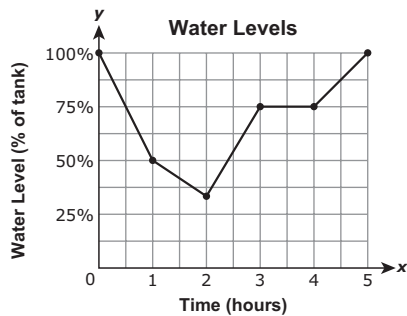
**A.**



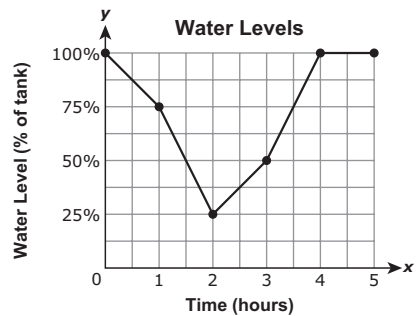
**C.**



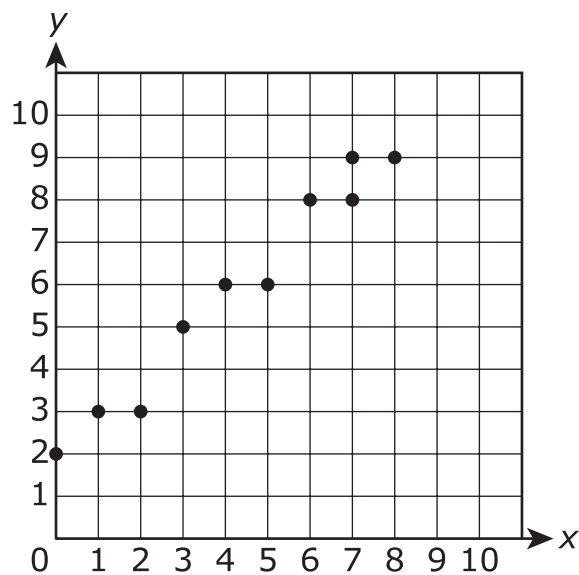
**B.**



**D.**



00. The graph shows a scatter plot.



Which equation **best** represents the data in the scatter plot?

- A.  $y = 2x + 0.9$
- B.  $y = 0.9x + 2$
- C.  $y = x$
- D.  $y = 2x$

00. Roger has two stacks of colored cards. The cards are the same shape and size. The tables show the number of each colored card he has in each stack.

Stack 1		Stack 2	
Color	Number of Cards	Color	Number of Cards
Red	8	Red	3
Purple	2	Purple	6
Yellow	6	Yellow	6
Blue	4	Blue	5

Roger will randomly select one card from each stack once.

Which statements are true?

Select the **two** that apply.

- A.** The probability that Roger will select a red card from Stack 1 and a blue card from Stack 2 is  $\frac{1}{3}$ .
- B.** The probability that Roger will select a purple card from Stack 1 and a purple card from Stack 2 is  $\frac{3}{5}$ .
- C.** The probability that Roger will select a yellow card from Stack 1 and a red or blue card from Stack 2 is  $\frac{3}{25}$ .
- D.** The probability that Roger will select a card from Stack 1 that is not blue and a card from Stack 2 that is not purple is 1.
- E.** The probability that Roger will select a yellow card from Stack 1 and a card from Stack 2 that is not red is greater than 25%.

**00.** What is the value of  $y$  in the solution to this system of equations?

$$3x + 2y = -12$$

$$2x + y = 4$$

**A.**  $-36$

**B.**  $-12$

**C.**  $4$

**D.**  $20$

**00.** What fraction is equivalent to the decimal number  $0.\overline{90}$ ?

**A.**  $\frac{10}{11}$

**B.**  $\frac{9}{10}$

**C.**  $\frac{1}{9}$

**D.**  $\frac{1}{90}$

- 00.** A linear function is represented by a table as shown.

<b><i>x</i></b>	<b><i>y</i></b>
2	8
3	11
5	17
10	32

Which **two** statements are true?

- A.** The equation of the linear function is  $y = \frac{1}{3}x + 5$ .
- B.** The equation of the linear function is  $y = 3x + 2$ .
- C.** The equation of the linear function is  $y = 3x$ .
- D.** The rate of change of the linear function is 3.
- E.** The rate of change of the linear function is 2.

- 00.** The area of Texas is about  $2.69 \times 10^5$  square miles, and the area of Delaware is about  $2.5 \times 10^3$  square miles.

About how many times larger is the area of Texas than the area of Delaware?

- A.** 11
- B.** 19
- C.** 93
- D.** 108



- 00.** What is the distance between  $(8, 3)$  and  $(53, 31)$  on a coordinate plane?
- A.** 35 units
  - B.** 44 units
  - C.** 53 units
  - D.** 70 units

## Metadata- Math

### Items

Page Number	UIN	Grade	Item Type	Key	DOK	TN Standards	Calculator
4	TN0010543	08	MC	C	1	8.EE.A.2	N
5	TN0011723	08	MC	B	2	8.G.B.5	N
6	TN0014579	08	MC	A	1	8.F.A.1	N
7	TN0031170	08	MC	A	2	8.EE.C.7a	Y
8	TN0031378	08	MC	D	2	8.G.A.1	Y
9	TN0032071	08	MS	B,C	2	8.NS.A.2	N
10	TN0032076	08	MC	C	2	8.EE.B.5	Y
11	TN0032101	08	MC	B	2	8.F.B.5	Y
12	TN0069341	08	MC	B	2	8.SP.A.2	Y
13	TN0069354	08	MS	C,E	2	8.SP.B.4	Y
14	TN0069359	08	MC	A	2	8.EE.C.8b	N
15	TN0069385	08	MC	A	1	8.NS.A.1	N
16	TN0069410	08	MS	B,D	2	8.F.B.4	Y
17	TN175913	08	MC	D	2	8.EE.A.4	Y
18	TN176008	08	MC	C	2	8.G.B.6	Y

### Metadata Definitions:

<b>UIN</b>	Unique letter/number code used to identify the item.
<b>Grade</b>	Grade level or Course.
<b>Item Type</b>	Indicates the type of item. MC= Multiple Choice; MS= Multiple Select
<b>Key</b>	Correct answer. This may be blank for constructed response items where students write or type their responses.
<b>DOK</b>	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.
<b>TN Standards</b>	Primary educational standard assessed.
<b>Calculator</b>	Y for items that permit calculator use.