

MCAS Mathematics - Grade 8 - Week of May 11

Question 1: Multiple-Choice

Reporting Category: Patterns, Relations, and Algebra

Standard: 8.P.1



Samir made a pattern by starting with 9 and repeatedly dividing by 3, as shown below.

$$9, 3, 1, \frac{1}{3}, ?, \frac{1}{27}, \dots$$

What number belongs in the position indicated by the question mark?

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

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

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

D. $\frac{1}{18}$

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Question 9: Open-Response

Reporting Category: Patterns, Relations, and Algebra

Standard: 8.P.6



Marisa drank one cup of milk and ate x small vanilla cookies for a snack. The linear equation below represents y , the total number of calories in Marisa's snack.

$$y = 12x + 120$$

- What is the y -intercept of the line represented by this equation?
 - Explain what the y -intercept tells us about Marisa's snack.
 - What is the slope of the line represented by this equation?
 - Explain what the slope tells us about Marisa's snack.
 - If Marisa eats 9 small vanilla cookies, what is the total number of calories in her snack? Show or explain how you got your answer.
-

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Question 10: Multiple-Choice

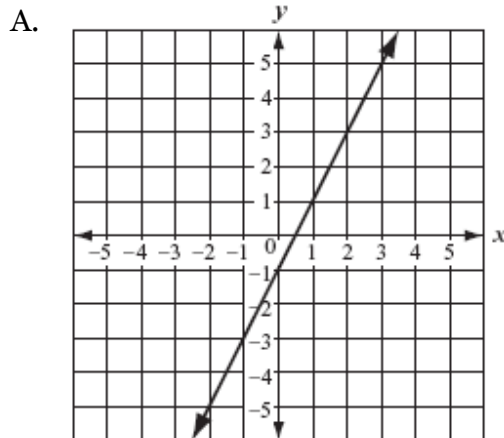
Reporting Category: Patterns, Relations, and Algebra

Standard: 8.P.7

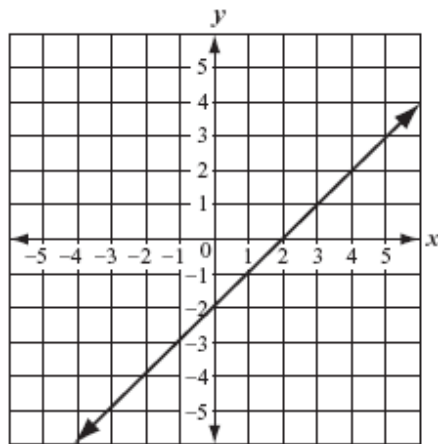


Which of the following graphs best represents the equation below?

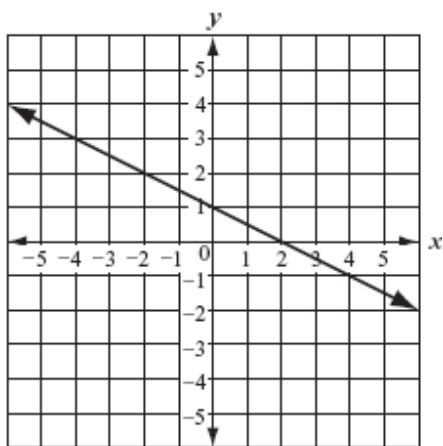
$$y = -2x + 1$$



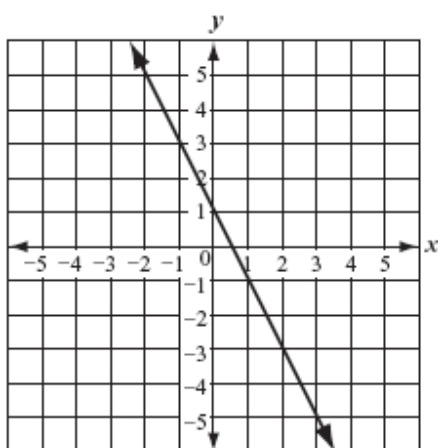
B.



C.



D.



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Question 14: Multiple-Choice

Reporting Category: Patterns, Relations, and Algebra

Standard: 8.P.3



Which of the following is equivalent to the expression below?

$$-2(x - 3)$$

- A. $x - 5$
- B. $x + 6$
- C. $-2x - 5$
- D. $-2x + 6$

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Question 16: Multiple-Choice

Reporting Category: Patterns, Relations, and Algebra

Standard: 8.P.1



The table below shows the relationship between the number of a term in a pattern and the value of that term. The same rule is used to find the value of the term in each row.

Term Number	Value of Term
1	3
2	5
3	7

n	?
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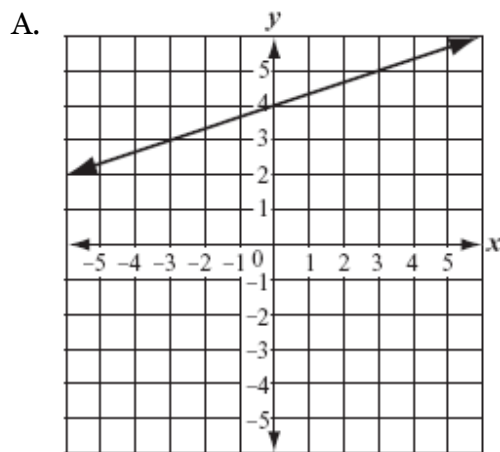
Based on the pattern shown in the table, which of the following expressions could

- A. $3n$
- B. $n + 2$
- C. $n + 5$
- D. $2n + 1$

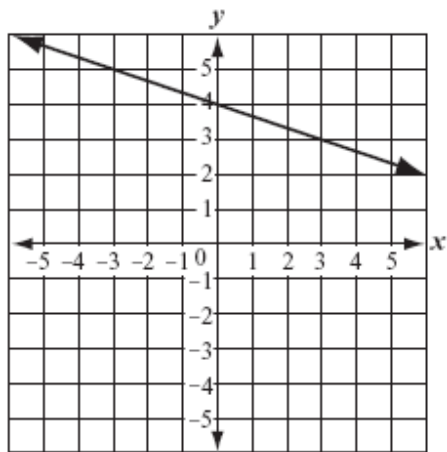
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Question 17: Multiple-Choice
Reporting Category: Patterns, Relations, and Algebra
 Standard: 8.P.10



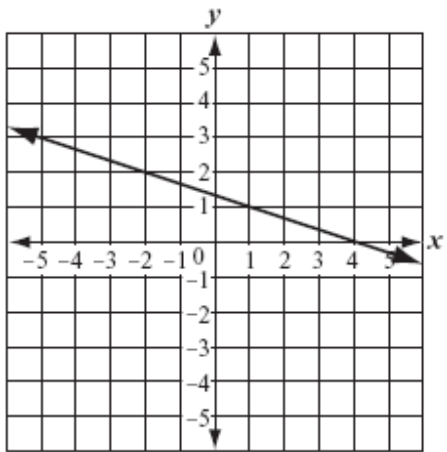
Which of the following lines appears to have a y -intercept of 4 and a slope of $\frac{1}{3}$?



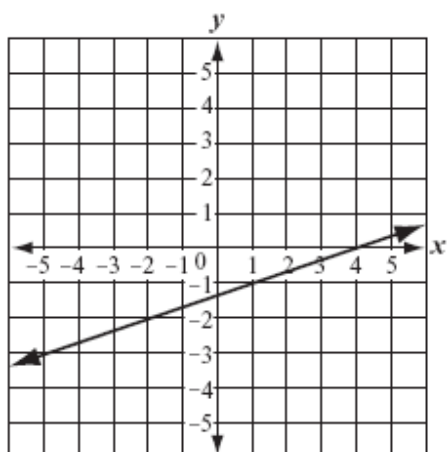
B.



C.



D.



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Question 21: Short-Answer

Reporting Category: Patterns, Relations, and Algebra

Standard: 8.P.7



What is the value of x that makes the equation below true?

$$2x - 3 = 11$$

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Question 23: Multiple-Choice

Reporting Category: Patterns, Relations, and Algebra

Standard: 8.P.2



What is the value of the expression below when $x = 3$ and $y = 5$?

$$2x^2 + 3y$$

- A. 27
- B. 33
- C. 51
- D. 53

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Question 27: Multiple-Choice

Reporting Category: Patterns, Relations, and Algebra

Standard: 8.P.5



What is the slope of the line represented by the equation below?

$$y = \frac{1}{2}x + 3$$

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

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Question 32: Multiple-Choice
Reporting Category: Patterns, Relations, and Algebra
Standard: 8.P.8



Andrea went to an amusement park.

- The cost of admission was \$5.
- The cost for each ride was \$0.75.

The equation below shows c , Andrea's total cost to go to the amusement park and go on r rides.

$$c = 5 + 0.75r$$

Based on the equation, which of the following statements is true?

- A. As the value of r increases, the value of c increases.
- B. As the value of r decreases, the value of c stays the same.
- C. As the value of c decreases, the value of r increases.
- D. As the value of c increases, the value of r stays the same.
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