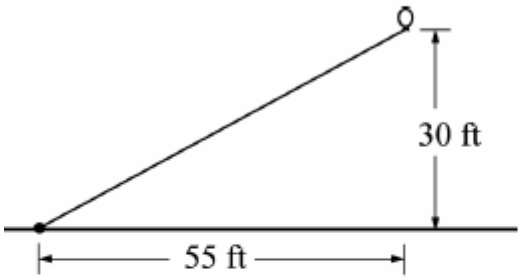
Algebra Quick Quiz

September 17,2019

1

A long string with a balloon at the end was tied to the ground. After a breeze came up, the balloon was 55 feet to the right of where it was tied and 30 feet above the ground, as shown in the figure below.



What is the slope of the line between the balloon and the point where it was tied?

A $\frac{6}{11}$

B $\frac{11}{6}$

C 30

D 55

2.

If $\frac{x}{5} = \frac{4}{15}$, what is the value of x?

A $\frac{4}{75}$

B $\frac{1}{3}$

C $\frac{4}{3}$

D $\frac{75}{}$

3.

If $\frac{k-3}{9} = \frac{2}{3}$, what is the value of k?

A 3
B 6
C 7
D 9

4.

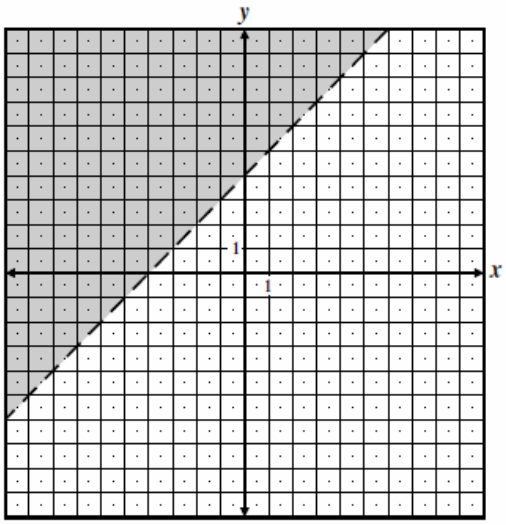
Jerry had k pencils. Darcy and Leonard then gave Jerry an additional x pencils each. Which expression could represent the number of pencils Jerry has now?

A $k + x$
B $k + 2x$
C $2k + x$
D $2(k + x)$

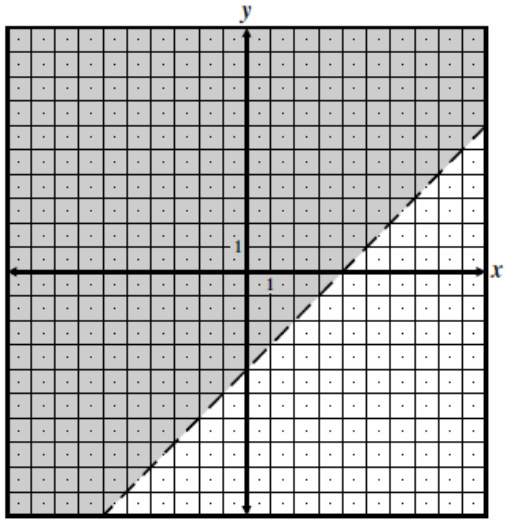
5.

Which of these shows the inequality $y > 4 - x$?

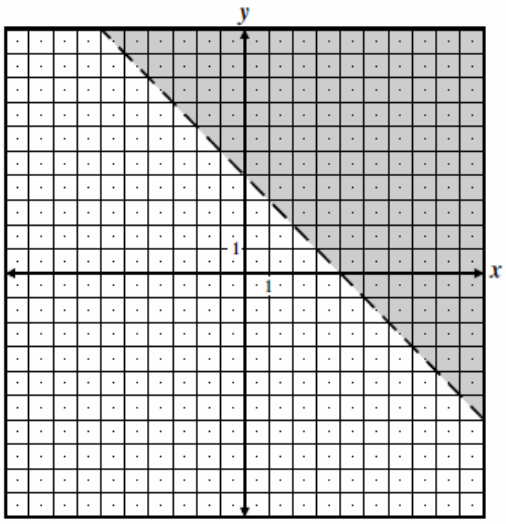
A



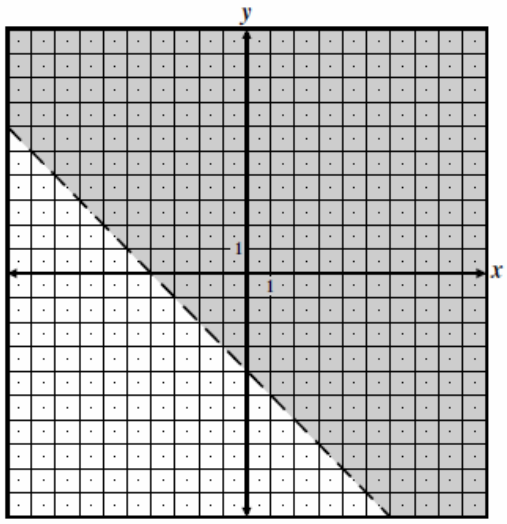
C



B

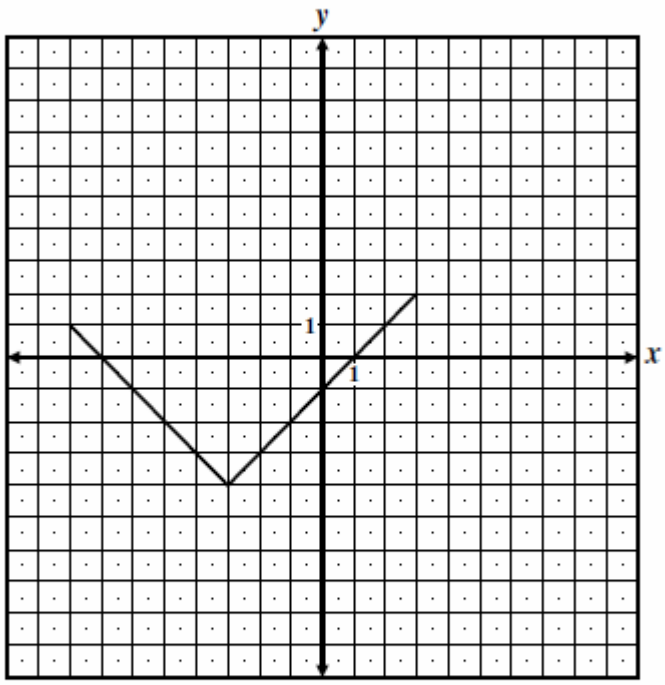


D



6.

Which of the following BEST describes the domain of the relation graphed below?



A $\{y \text{ such that } -8 \leq y \leq 2\}$
B $\{x \text{ such that } -4 \leq x \leq 3\}$
C $\{y \text{ such that } -4 \leq y \leq 2\}$
D $\{x \text{ such that } -8 \leq x \leq 3\}$

7.

Jamie rolls two six-sided number cubes. What is the probability that the sum of the numbers on the cube faces will be greater than or equal to 7?

A $\frac{1}{3}$

B $\frac{19}{36}$

C $\frac{5}{9}$

D $\frac{21}{36}$

8.

Which expression represents $y^4 - 36$ in simplest factored form?

A $(y^2+4)(y^2-9)$

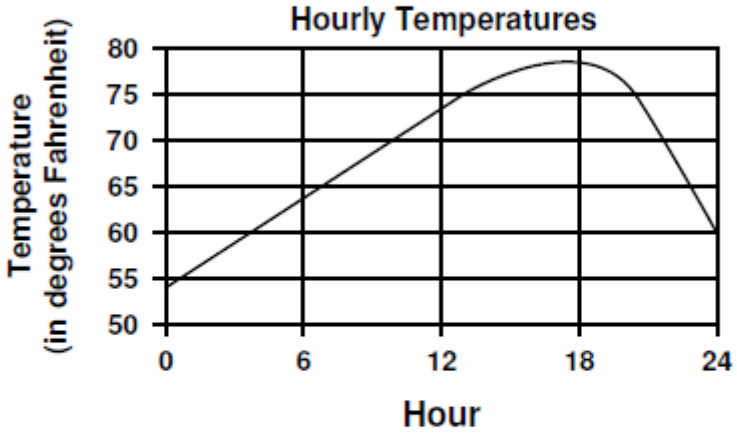
B $(y^2+4)(y-3)(y+3)$

C $(y^2+6)(y^2-6)$

D $(y^4-36)(y+1)$

9.

The graph below shows the outside temperature recorded every hour for a 24-hour period in Larry's hometown.



What is the range of this graph?

A 54°F to 78°F
B 1 hour to 24 hours
C 54°F to 60°F
D 24 hours to 80 hours

10.

The time that it takes to fill a tank depends upon the rate at which the water is flowing. It takes 40 minutes to fill the tank at the rate of 3 gallons per minute. How many minutes will it take to fill the tank at the rate of 4 gallons per minute?

A $\frac{12}{40}$

B 30

C 50

D $53\frac{1}{3}$

BONUS

11.

Which expression is equivalent to $(3x^5 + 8x^3) - (7x^2 - 6x^3)$?

Ⓐ $-4x^3 + 14$

Ⓑ $-4x^5 + 14x^3$

Ⓒ $3x^5 + 14x^3 - 7x^2$

Ⓓ $3x^5 + 2x^3 - 7x^2$