Algebra Quick Quiz 12132021

Question 1.
You should be able to do this question without graphing calculator or Desmos.

Consider the graph of the function $s(x) = x^2 + 6x + 9$.

The graph of $s(x)$ is translated to produce the graph of $t(x)$, where $t(x) = x^2 + 6x + 13$. Which is a correct description of the translation?

○ A. vertical shift 4 units up

○ B. vertical shift 4 units down

○ C. horizontal shift 4 units to the left

○ D. horizontal shift 4 units to the right

Question 2

Which graph showing the relation between x and y represents y as a function of x? Select **all** that apply.
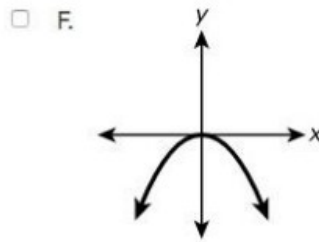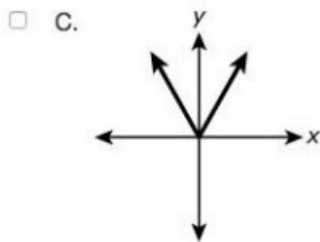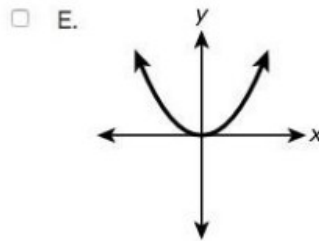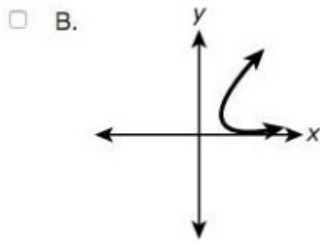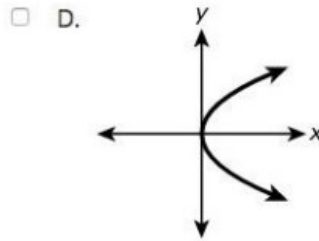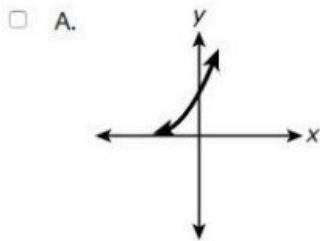
Question 3.

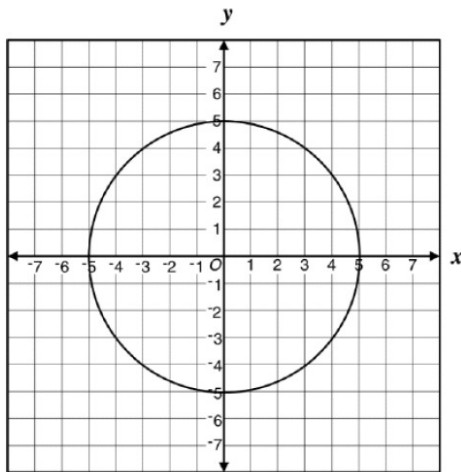Loki said the following graph does **not** represent a function of **x**.

Which pair of points could Loki use to prove that her statement is correct?

F> (-3, 4) and (-3 ,-4)
G> (-4, 3) and (4, 3)
H> (-3, 4) and (4, -3)
J> (-5, 0) and (5, 0)

Question 4.
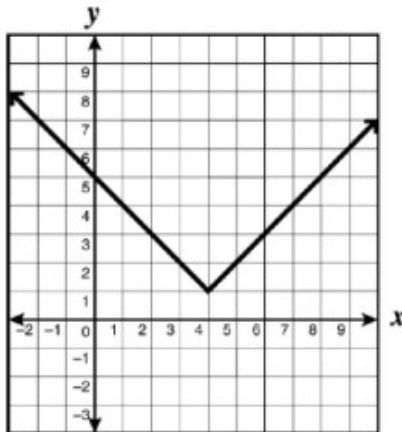
What is the apparent range of the function of x shown?

F> The set of all real numbers greater than or equal to 4
G> The set of all real numbers greater than or equal to 1
H> The set of all real numbers less than or equal to 1
J> The set of all real numbers

Question 5.

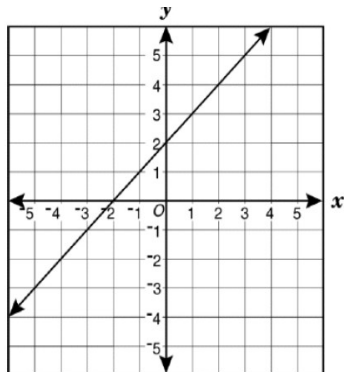Which equation best describes this graph?

F) y = -x
G) y = 2x + 2
H) y = x - 2
J) y = x + 2

Question 6.

Choose the description of a graph of a function.

A The graph of a function is a drawing that represents its solution set.

B The graph of a function is a drawing that represents only its domain.

C The graph of a function is a drawing that represents only its range.

D The graph of a function is a drawing that represents only its midpoint.

Question 7.

A cell phone company charges \$60.00 a month for up to 1 gigabyte of data. The cost of additional data is \$0.05 per megabyte. If d represents the number of additional megabytes used and c represents the total charges at the end of the month, which linear equation can be used to determine a user's monthly bill?

(1) $c = 60 - 0.05d$ (3) $c = 60d - 0.05$

(2) $c = 60.05d$ (4) $c = 60 + 0.05d$
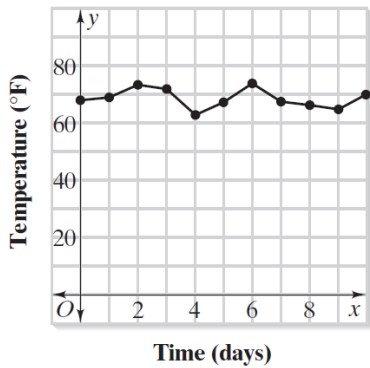
Question 8.

Which system of equations has the same solution as the system below?

$$2x + 2y = 16$$
$$3x - y = 4$$

(1) $2x + 2y = 16$
    $6x - 2y = 4$

(2) $2x + 2y = 16$
    $6x - 2y = 8$

(3) $x + y = 16$
    $3x - y = 4$

(4) $6x + 6y = 48$
    $6x + 2y = 8$

Question 9.

. The graph below shows recorded temperature highs for Austin, Texas, for several days in January.

Time (days)

Which inequality best approximates the range of this function?

A $1 \le y \le 15$

B $0 \le y \le 75$

C $60 \le y \le 80$

D $61 \le y \le 75$

Question 10.

Find the domain *d* and range *r* of the
relation.

x	y
−2	3
6	1
−1	3
3	4
−2	1

A $d = \{3, 1, 4\}; r = \{-2, 6, -1, 3\}$
B $d = \{1, -5, 2, 1, -1\}; r = \{1, 3, 4\}$
C $d = \{-2, -1, 3, 6\}; r = \{1, 3, 4\}$
D $d = \{-1, 3, 6\}; r = \{1, 4\}$

Bonus
Question 11.

A system of linear equations for the variables *x* and *y* is shown.

$$\begin{cases} y = -x - 4 \\ 3y = cx - 18 \end{cases}$$

For what value of *c*, if any, will this system have no solution? Justify your answer.