Quick Quiz 01282022

Question 1.

Which function is NOT linear?

A $x + 2 = y$

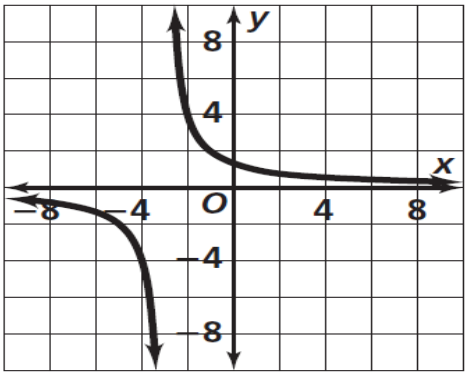
B $\frac{x}{4} = y$

C $x + y - 30 = 3x$

D $y = 25 - x^2$

Question 2

The function $y = \frac{4}{x + 3}$ is graphed below.



For which values is the function positive?

A $x \leq 0$

B $x > -3$

C $x < -3$

D $x \geq -7$

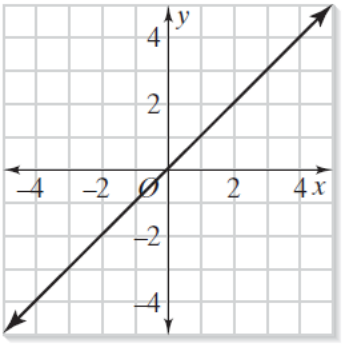
Question 3.

Which value of x makes $\frac{x-3}{4}+\frac{2}{3}=\frac{17}{12}$ true?

(1) 8
(2) 6
(3) 0
(4) 4

Question 4.

Which equation represents the function graphed below?



A $y = x$
B $y = -x$
C $y = 2x$
D $y = 1 - x$

Question 5.

A company that manufactures radios first pays a start-up cost, and then spends a certain amount of money to manufacture each radio. If the cost of manufacturing r radios is given by the function $c(r) = 5.25r + 125$, then the value 5.25 best represents

(1) the start-up cost
(2) the profit earned from the sale of one radio
(3) the amount spent to manufacture each radio
(4) the average number of radios manufactured

Question 6.

Which function does the table of values represent?

x	-2	-1	0	1	2
y	-3	0	1	0	-3

A $y = -x^2 + 1$ **C** $y = -2x^2 - 2$

B $y = x^3 - 5$ **D** $y = 2x^3 + 9$

Question 7.

If $f(x) = \frac{1}{3}x + 9$, which statement is always true?

(1) $f(x) < 0$

(2) $f(x) > 0$

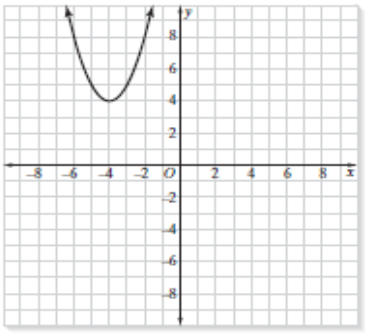
(3) If $x < 0$, then $f(x) < 0$.

(4) If $x > 0$, then $f(x) > 0$.

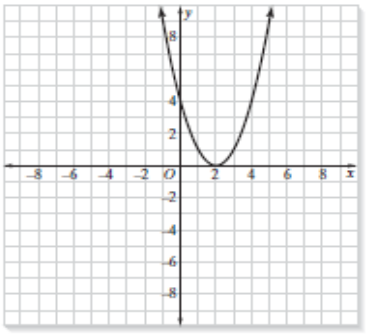
Question 8.

Which of the following represents a graph of a quadratic function with no real-number solution?

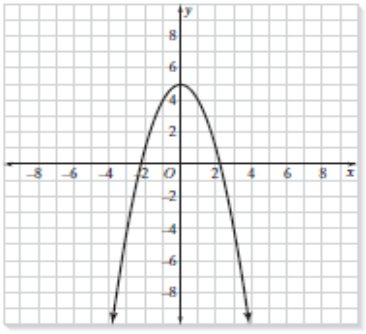
A



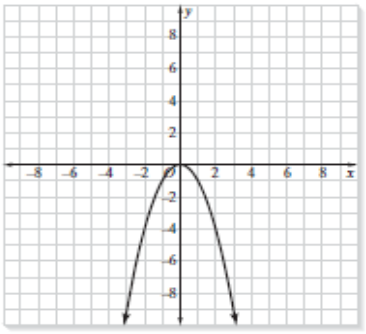
B



C

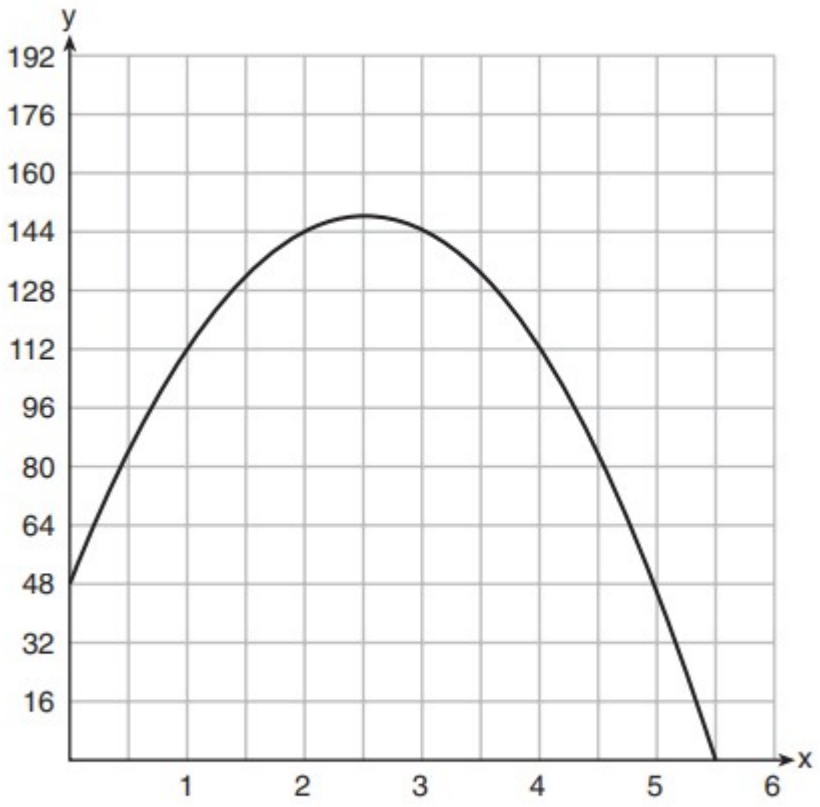


D



Question 9.

A ball is thrown into the air from the edge of a 48-foot-high cliff so that it eventually lands on the ground. The graph below shows the height, y, of the ball from the ground after x seconds.



For which interval is the ball's height always *decreasing*?

(1) $0 \leq x \leq 2.5$

(2) $0 < x < 5.5$

(3) $2.5 < x < 5.5$

(4) $x \geq 2$

Question 10.

If the parent function of $f(x)$ is $p(x) = x^2$, then the graph of the function $f(x) = (x - k)^2 + 5$, where $k > 0$, would be a shift of

(1) k units to the left and a move of 5 units up

(2) k units to the left and a move of 5 units down

(3) k units to the right and a move of 5 units up

(4) k units to the right and a move of 5 units down

Bonus Question

Question 11

Given: $f(x) = \frac{2}{3}x - 4$ and $g(x) = \frac{1}{4}x + 1$

Four statements about this system are written below.

I. $f(4) = g(4)$

II. When $x = 12$, $f(x) = g(x)$.

III. The graphs of $f(x)$ and $g(x)$ intersect at (12,4).

IV. The graphs of $f(x)$ and $g(x)$ intersect at (4,12).

Which statement(s) are true?

(1) II, only

(2) IV, only

(3) I and IV

(4) II and III