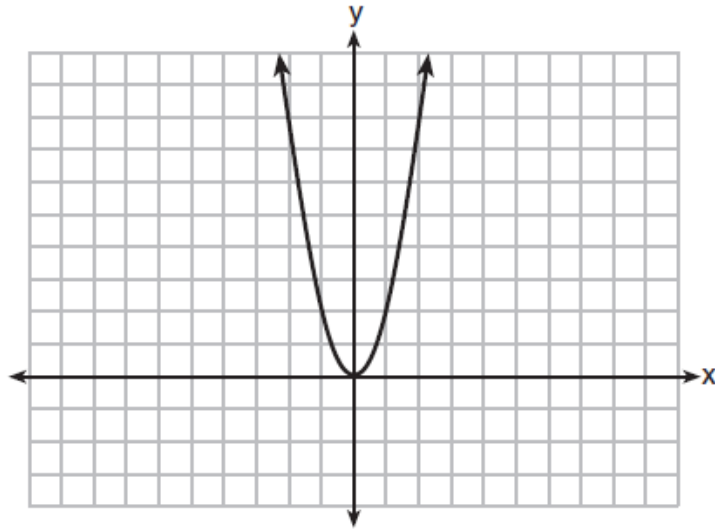Algebra 1 Quick quiz03072023

Question 1.

The graph of the equation $y = ax^2$ is shown below.

If a is multiplied by $-\frac{1}{2}$, the graph of the new equation is

(1) wider and opens downward
(2) wider and opens upward
(3) narrower and opens downward
(4) narrower and opens upward

Question 2

The third term in an arithmetic sequence is 10 and the fifth term is 26. If the first term is a_1, which is an equation for the nth term of this sequence?

(1) $a_n = 8n + 10$ (3) $a_n = 16n + 10$
(2) $a_n = 8n - 14$ (4) $a_n = 16n - 38$

Question 3.

The zeros of the function $f(x) = (x + 2)^2 - 25$ are

(1) -2 and 5 (3) -5 and 2

(2) -3 and 7 (4) -7 and 3

Question 4.

The table below shows the average diameter of a pupil in a person's eye as he or she grows older.
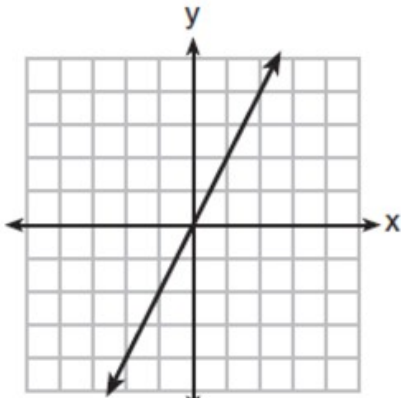
Age (years)	Average Pupil Diameter (mm)
20	4.7
30	4.3
40	3.9
50	3.5
60	3.1
70	2.7
80	2.3

What is the average rate of change, in millimeters per year, of a person's pupil diameter from age 20 to age 80?
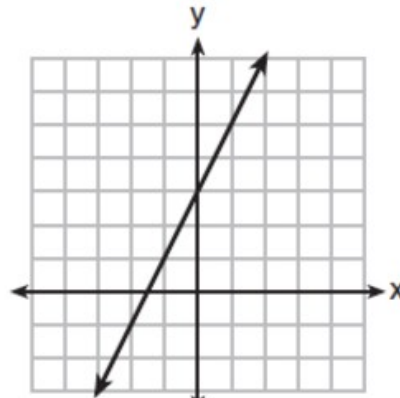
(1) 2.4   (3) -2.4
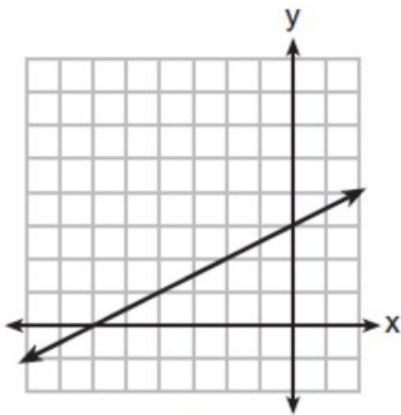
(2) 0.04   (4) -0.04

Question 5.

Which graph shows a line where each value of y is three more than half of x?
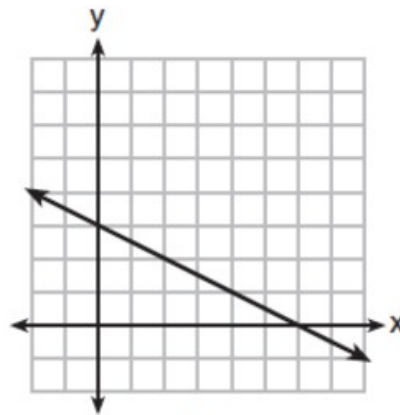

(1)

(3)

(2)

(4)

Question 6.

What is the value of x in the equation $\frac{x-2}{3} + \frac{1}{6} = \frac{5}{6}$?

(1) 4

(3) 8

(2) 6

(4) 11

Question 7.

During the 2010 season, football player McGee's earnings, m, were 0.005 million dollars more than those of his teammate Fitzpatrick's earnings, f. The two players earned a total of 3.95 million dollars. Which system of equations could be used to determine the amount each player earned, in millions of dollars?

(1) $m + f = 3.95$
    $m + 0.005 = f$

(2) $m - 3.95 = f$
    $f + 0.005 = m$

(3) $f - 3.95 = m$
    $m + 0.005 = f$

(4) $m + f = 3.95$
    $f + 0.005 = m$

Question 8.

Which expression is equivalent to $x^4 - 12x^2 + 36$?

(1) $(x^2 - 6)(x^2 - 6)$

(2) $(x^2 + 6)(x^2 + 6)$

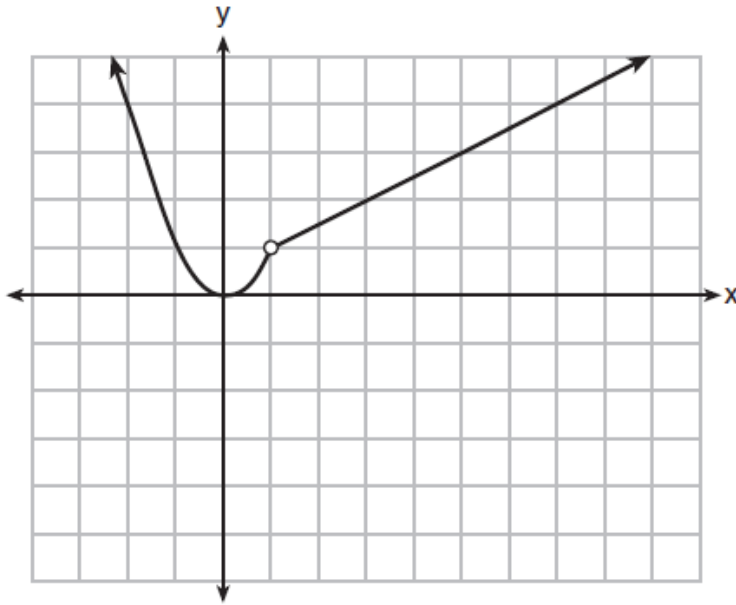(3) $(6 - x^2)(6 + x^2)$

(4) $(x^2 + 6)(x^2 - 6)$

Question 9.

The function $h(t) = -16t^2 + 144$ represents the height, $h(t)$, in feet, of an object from the ground at t seconds after it is dropped. A realistic domain for this function is

(1) $-3 \le t \le 3$

(2) $0 \le t \le 3$

(3) $0 \le h(t) \le 144$

(4) all real numbers

\

Question 10.

A function is graphed on the set of axes below.
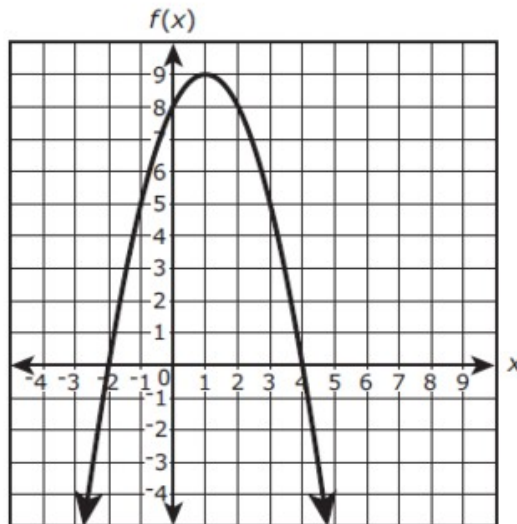

Which function is related to the graph?

(1) $f(x) = \begin{cases} x^2, & x < 1 \\ x - 2, & x > 1 \end{cases}$

(3) $f(x) = \begin{cases} x^2, & x < 1 \\ 2x - 7, & x > 1 \end{cases}$

(2) $f(x) = \begin{cases} x^2, & x < 1 \\ \frac{1}{2}x + \frac{1}{2}, & x > 1 \end{cases}$

(4) $f(x) = \begin{cases} x^2, & x < 1 \\ \frac{3}{2}x - \frac{9}{2}, & x > 1 \end{cases}$

The figure shows a graph of the function of $f(x)$ in the xy-coordinate plane, with the vertex at $(1, 9)$ and the zeros at -2 and 4.

$f(x)$

The function g is defined by $g(x) = -3x + 2$.

Which statements are true? Select **all** that apply.

1. $f(2)$ is greater than $g(2)$.

2. $f(1)$ is less than $g(1)$.

3. $f(0)$ is greater than $g(0)$.

4. $f(-1)$ is less than $g(-1)$.

5. $f(-2)$ is greater than $g(-2)$.