

Worksheet: Evaluating Quadratic Functions



Q1: Which of the following is NOT a point on the curve $y = 12x^2 - 4x$?

A $(-1, 16)$

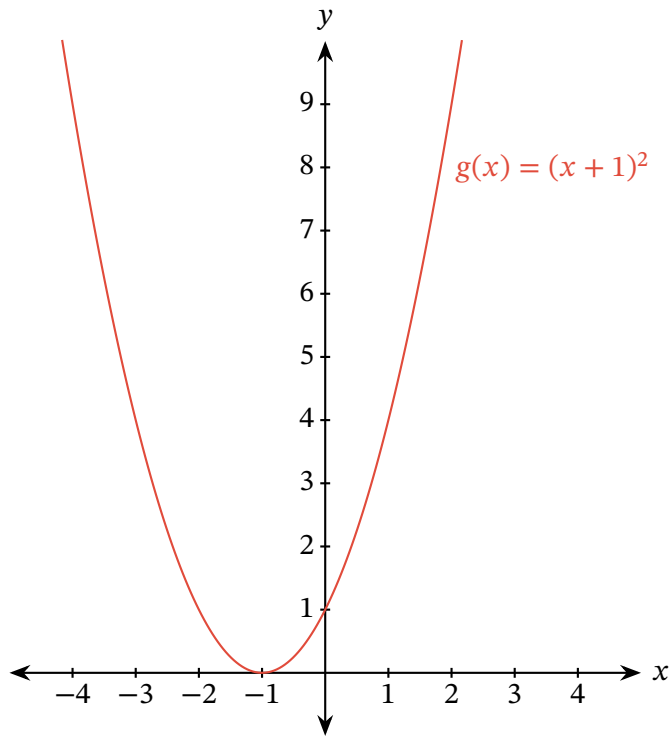
B $(0, 0)$

C $\left(-\frac{1}{2}, 5\right)$

D $(1, 7)$

E $\left(\frac{1}{2}, 1\right)$

Q2: Given the graph, evaluate $g(-1)$.



- A 1
- B 0
- C -1
- D 2

Q3: The function $f(x) = 8x - b$ and the function $g(x) = 2x^2 - b$. Find $f(-5) + g(-10)$ given $f(-10) + g(-6) = -14$.

A 160

B 234

C -240

D 154

Q4: Which of the following points is on the graph of the equation $x^2 - y^2 = 8$?

A (-3, 1)

B (1, -3)

C (1, 3)

D (-1, -3)

Q5: Find the values of b and c given the function $f(x) = -x^2 + bx + c$, and $f(x) = -8$ when $x \in \{3, -5\}$.

A $b = 3, c = 2$

B $b = -2, c = 7$

C $b = -32, c = -5$

D $b = -5, c = 3$

Q6: Find the value of c given the function $f(x) = x^2 + c$ passes through the point $(7, 8)$.

A 8

B -49

C 57

D -41

E 41

Q7: Find $h(-10)$ given $h(x) = ax^2 + bx + c$ where $h(-5) = -35$ and $\{0, 2\}$ is the set of zeros for $h(x)$.

A -21

B -120

C -98

D 12

Q8: Which of the following is equivalent to $f(2\sqrt{6} + 1)$ for the function $f(x) = x^2 - 2x - 3$?

A $-10f(1 - \sqrt{6})$

B $10f(1 - \sqrt{6})$

C $f(1 - \sqrt{6})$

D $10f(1 - 2\sqrt{6})$

Q9: A study of 10 000 people was carried out to investigate the rate of infection of influenza. The number of infections, y , occurring n years after 2004 can be found using the equation

$$y = -2.5n^2 - 7.5n + 909.$$

Calculate the number of infections in 2010 and 2012.

A 774 persons, 689 persons

B 884 persons, 839 persons

C 884 persons, 884 persons

D 900 persons, 913 persons

Q10: An object is dropped from a height of 600 feet. It has a height $h(t)$ in feet after t seconds have elapsed such that $h(t) = 600 - 16t^2$. Express t as a function of height h , and then calculate the time taken to drop to a height of 400 feet to one decimal place.

A $t = \frac{600 - h}{16}$, 12.5 seconds

B $t = \sqrt{\frac{600 - h}{16}}$, 3.5 seconds

C $t = \frac{\sqrt{600 + h}}{16}$, 2 seconds

D $t = \frac{\sqrt{600 - h}}{16}$, 0.88 seconds

E $t = \sqrt{\frac{600 + h}{16}}$, 7.9 seconds