# Ottocento Lesson #13 Basic Quadratics Worksheet

Video Solutions at: https://youtu.be/UapG82wxmuM

Question 1

$$f(x) = 5(x+2)^2 - 8$$

The given equation defines the function *f*. For what value of *x* does *f*(*x*) reach its minimum?

Question 2

$$f(x) = -4(x-3)^2 + 7$$

The given equation defines the function *f*. What is the maximum value of *f*(*x*)?

Question 3

$$f(x) = (x+10)(x+6)$$

The given equation defines the function *f*. What is the minimum value of *f*(*x*)?

Question 4

$$f(x) = -3(x + 5)(x - 9)$$

The given equation defines the function *f*. For what value of *x* does *f*(*x*) reach its maximum?

Question 5

$$f(x) = -5x^2 - 8x + 3$$

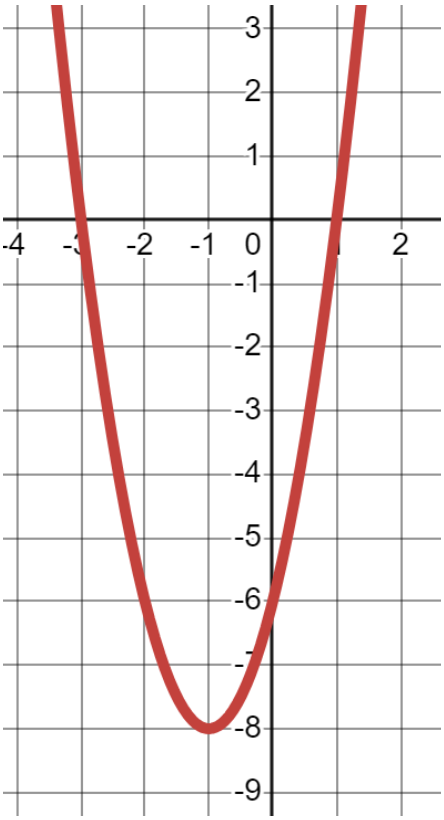
The given equation defines the function *f*. What is the maximum value of *f*(*x*)?

Question 6

$$f(x) = 4x^2 - 54x - 11$$

The given equation defines the function *f*. For what value of *x* does *f*(*x*) reach its minimum?

Question 7




The graph above represents a parabola. Which of the following equivalent forms of the function displays both of the *x*-intercepts of the parabola as constants or coefficients?

A) $f(x) = 2(x+1)^2 - 8$

B) $f(x) = 2x^2 + 4x - 6$

C) $f(x) = 2(x+3)(x-1)$

D) $f(x) = x(2x+4) - 6$

Question 8

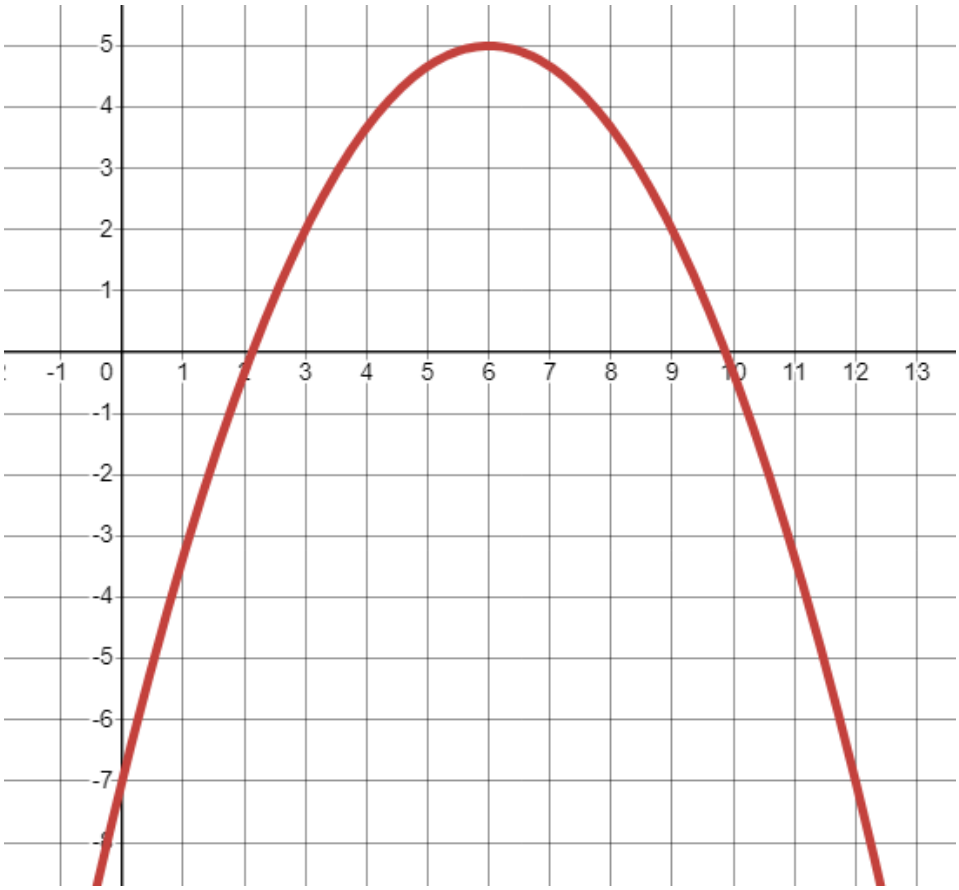
When the quadratic function f is graphed in the xy-plane, where y = f(x), its vertex is (-12,4). One of the x-intercepts of the graph is (4/9,0). What is the other x-intercept of the graph?

Question 9

$$f(x) = ax^2 + bx + c$$

The parabola given has a vertex with an x-coordinate of 8. If $a = 3$, what is the value of $b$?

Question 10




The graph of $y = ax^2 + 4x + c$ is shown, where *a* and *c* are constants. What is the value of $\frac{a}{c}$?

Question 11

The graph of a quadratic function $f$ has a vertex of (4,5). The quadratic function also passes through the point (1,32). What is the vertex form of the function? What is the value of $f(13)$?

Question 12

The graph of a quadratic function f has a vertex of (3,650). The quadratic function also passes through the point (9,74). What is the vertex form of the function? For what positive value of $x$ does $f(x) = 394$?

Question 13

$$5x^2 + 11x - 19 = 0$$

The given equation has two solutions. What is the sum of the solutions? What is the product of the solutions?

Question 14

$$-3x^2 + 15x + c = 0$$

The given equation has two solutions. One of the solutions is -9. What is the value of the other solution?

Question 15

If $y = 5x^2 + 8x + 2$ is graphed in the *xy*-plane, which of the following characteristics of the graph is displayed as a constant or coefficient?

A) *y*-coordinate of the vertex

B) *y*-intercept

C) *x*-intercept(s)

D) *x*-intercept of the line of symmetry