Exercise Set 2 (No Calculator)

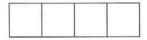
1

If (x-2)(x+2) = 0, then $x^2 + 10 =$



2

If $(a-3)(a+k) = a^2 + 3a - 18$ for all values of a, what is the value of k?



3

When the quadratic function y = 10(x + 4)(x + 6) is graphed in the *xy*-plane, the result is a parabola with vertex at (a, b). What is the value of ab?



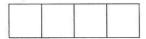
4

If the function $y = 3x^2 - kx - 12$ has a zero at x = 3, what is the value of k?



5

If the graph of a quadratic function in the xy-plane is a parabola that intersects the x-axis at x = -1.2 and x = 4.8, what is the x-coordinate of its vertex?



6

If the graph of y = a(x - b)(x - 4) has a vertex at (5, -3), what is the value of ab?



7

What is the sum of the zeros of the function $h(x) = 2x^2 - 5x - 12$?



8

If x = -5 is one of the solutions of the equation $0 = x^2 - ax - 12$, what is the other solution?



9

Which of the following is equivalent to $2a(a-5) + 3a^2(a+1)$ for all values of a?

A)
$$6a^4 - 24a^3 - 6$$

B)
$$5a^5 + 3a^2 - 10a$$

C)
$$3a^3 + 5a^2 - 10a$$

D)
$$3a^3 + 2a^2 - 10a - 6$$

10

Which of the following functions, when graphed in the *xy*-plane, has exactly one negative *x*-intercept and one negative *y*-intercept?

A)
$$y = -x^2 - 6x - 9$$

B)
$$y = -x^2 + 6x - 9$$

C)
$$y = x^2 + 6x + 9$$

D)
$$y = x^2 - 6x + 9$$

11

If $2x^2 + 8x = 42$ and x < 0, what is the value of x^2 ?

- A) 4
- B) 9
- C) 49
- D) 64

12

When the function $y = h(x) = ax^2 + bx + c$ is graphed in the *xy*-plane, the result is a parabola with vertex at (4, 7). If h(2) = 0, which of the following must also equal 0?

- A) h(5)
- B) h(6)
- C) h(8)
- D) h(9)