

Practice Assignment

Solve the quadratic equation to find its zeros.

1. $x^2 + 3x - 4 = 0$

$(x + 4)(x - 1) = 0$

$x = -4$ and $x = 1$

2. $2x^2 - 7x - 4 = 0$ a not 1

$(2x + 1)(x - 4) = 0$

$\frac{2x+1}{1} = 0$

$x = 4$

$\frac{2x}{2} = \frac{-1}{2}$

$x = -\frac{1}{2}$

3. $x^2 - 64 = 0$

$(x + 8)(x - 8) = 0$

$x = -8$ and $x = 8$

4. $\frac{6x^2}{2} + \frac{16x}{2} - \frac{6}{2} = 0$

$2(3x^2 + 8x - 3) = 0$

$2(3x - 1)(x + 3) = 0$

$\frac{3x-1}{1} = 0$

$x = -3$

$\frac{8x}{8} = \frac{1}{3}$

$x = \frac{1}{3}$

5. $(x - 4)(3x + 2) = 0$

$x = 4$

$\frac{3x+2}{-2} = 0$

$\frac{8x}{3} = \frac{-2}{3}$

$x = -\frac{2}{3}$

6. $x^2 - 7x - 8 = 0$

$(x - 8)(x + 1) = 0$

$(x - 8)(x + 1) = 0$

$x = 8$ and $x = -1$

7. $(x + 2)(x - 6) = 0$

$x = -2$ and $x = 6$

8. $x^2 + 9x = 0$

$x(x + 9) = 0$

$x = 0$ $x = -9$

9. $x^2 - 2x - 15 = 0$

$(x + 3)(x - 5) = 0$

$(x + 3)(x - 5) = 0$

$x = -3$ and $x = 5$

10. $3x^2 - x - 2 = 0$

$(3x + 2)(x - 1) = 0$

$(3x + 2)(x - 1) = 0$

$\frac{3x+2}{-2} = 0$

$x = 1$

$\frac{8x}{8} = \frac{-2}{3}$

$x = -\frac{2}{3}$

11. $4x^2 = -12x$

$4x^2 + 12x = 0$

$4x(x + 3) = 0$

$\frac{4x}{4} = 0$ $x = -3$

$x = 0$

12. $3x^2 - 21x + 18 = 0$

$\frac{3x^2 - 21x + 18}{3} = 0$

$3(x^2 - 7x + 6) = 0$

$3(x - 1)(x - 6) = 0$

$x = 1$ and $x = 6$

Calculate the zeros of the following functions:

13. $f(x) = (x + 7)(x - 4)$

$x = -7$ and $x = 4$

14. $f(x) = (x - 5)(x - 5)$

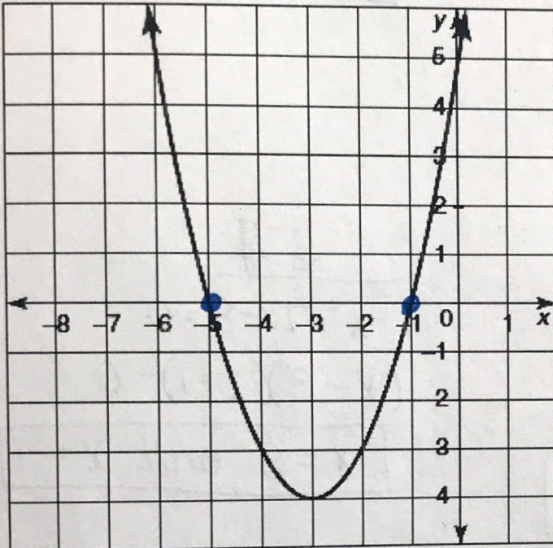
$x = 5$

15. $f(x) = 3x(x + 4)$

$x = 0$ and $x = -4$

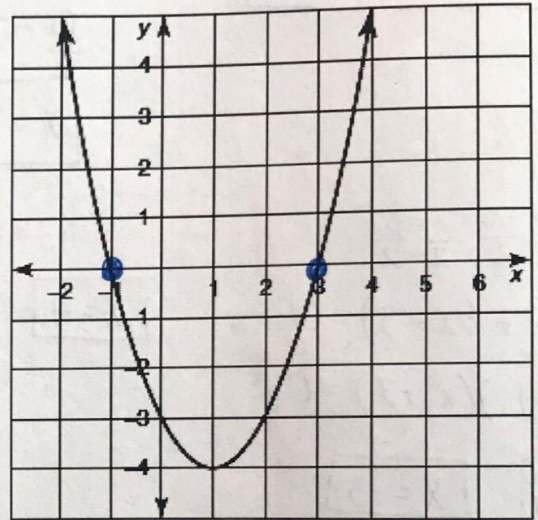
Write an equation to represent the graphs below:

16.



Zeros: $x = -5$ and $x = -1$
 $y = (x + 5)(x + 1)$

17.



Zeros: $x = -1$ and $x = 3$
 $y = (x + 1)(x - 3)$

Write a function in both factored and standard form for the given zeros:

18. Zeros: $x = 4$ and -5 ; opens down

Intercept Form: $y = -(x - 4)(x + 5)$

Standard Form: $y = -x^2 - x + 20$

$y = -(x - 4)(x + 5)$
 $y = -(x^2 + 5x - 4x - 20)$
 $y = -x^2 - x + 20$

19. Zeros: $x = 0$ and 2 ; opens up

Intercept Form: $y = x(x - 2)$

Standard Form: $y = x^2 - 2x$

20. What are the factors and zeros of $2x^2 + 17x + 30 = 0$?

Factors: $(2x + 5)(x + 6) = 0$

Zeros: $2x + 5 = 0$ $x + 6 = 0$
 $\frac{2x}{2} = \frac{-5}{2}$ $\frac{-6}{1} = \frac{-6}{1}$
 $x = -\frac{5}{2}$ $x = -6$