

Calculate the zeros of the following functions:

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

$$\begin{array}{l} x+7=0 \\ -7 \quad -7 \end{array} \left\{ \begin{array}{l} x-4=0 \\ +4 \quad +4 \end{array} \right. \\ \boxed{x=-7} \quad \boxed{x=4}$$

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

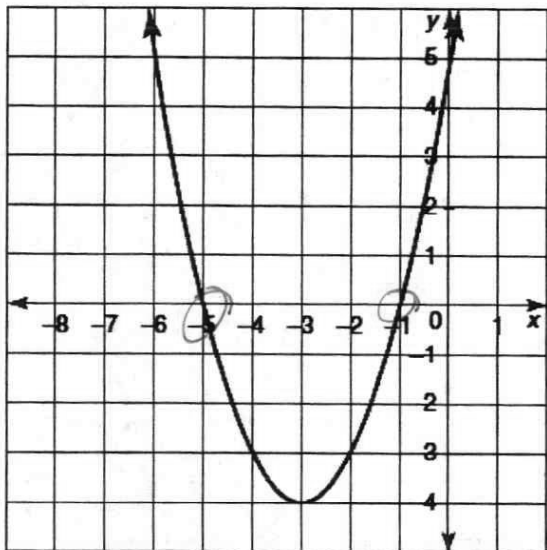
$$\begin{array}{l} x-5=0 \\ +5 \quad +5 \end{array} \left\{ \begin{array}{l} x-5=0 \\ +5 \quad +5 \end{array} \right. \\ \boxed{x=5} \quad \boxed{x=5}$$

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

$$\begin{array}{l} 3x=0 \\ \frac{3}{3} \quad \frac{3}{3} \end{array} \left\{ \begin{array}{l} x+4=0 \\ -4 \quad -4 \end{array} \right. \\ \boxed{x=0} \quad \boxed{x=-4}$$

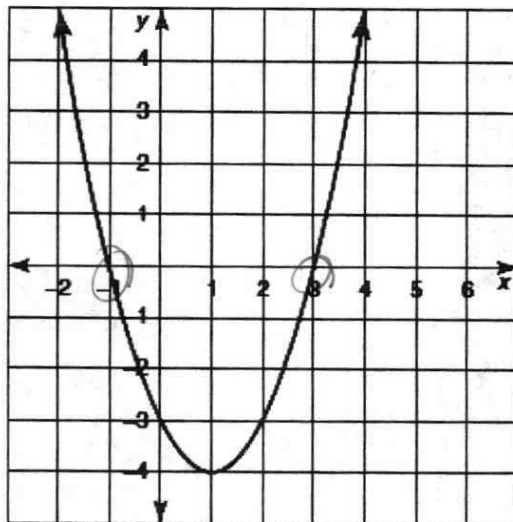
Write an equation to represent the graphs below:

16.



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

17.



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

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

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

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

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

$$\begin{aligned} &-(x-4)(x+5) \\ &-(x^2 + 5x - 4x - 20) \\ &-(x^2 + x - 20) \\ &y = -x^2 - x + 20 \end{aligned}$$

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

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

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

$$\begin{aligned} &x(x-2) \\ &x^2 - 2x \end{aligned}$$

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

$$\begin{array}{r} \cancel{60} \\ 12 \quad \cancel{5} \\ \cancel{17} \end{array} \quad \begin{array}{r} \frac{12}{2} \\ \downarrow \\ 6 \end{array} \quad \begin{array}{r} \frac{5}{2} \\ \downarrow \\ \frac{5}{2} \end{array}$$

$(x+6)(2x+5)$

warm-up