

Algebra 1 Benchmark 11.2

Topic: Factoring Special Polynomials

Factor the following polynomials:

1. $x^2 - 64$

$$\begin{aligned} &(x)^2 - (8)^2 \\ &\quad \begin{matrix} a & b \end{matrix} \\ &(a-b)(a+b) \\ &\boxed{(x-8)(x+8)} \end{aligned}$$

2. $25x^6 - 16y^2$

$$\begin{aligned} &(5x^3)^2 - (4y)^2 \\ &\quad \begin{matrix} a & b \end{matrix} \\ &\boxed{(5x^3 + 4y)(5x^3 - 4y)} \end{aligned}$$

3. $25x^2 - 40x + 16$

$$\begin{aligned} &(5x)^2 - (4)^2 \\ &\quad \begin{matrix} a & b \end{matrix} \\ &(5x)(4) = 20x \\ &(a \pm b)^2 \\ &\boxed{(5x - 4)^2} \end{aligned}$$

Algebra 1 Benchmark 21.0

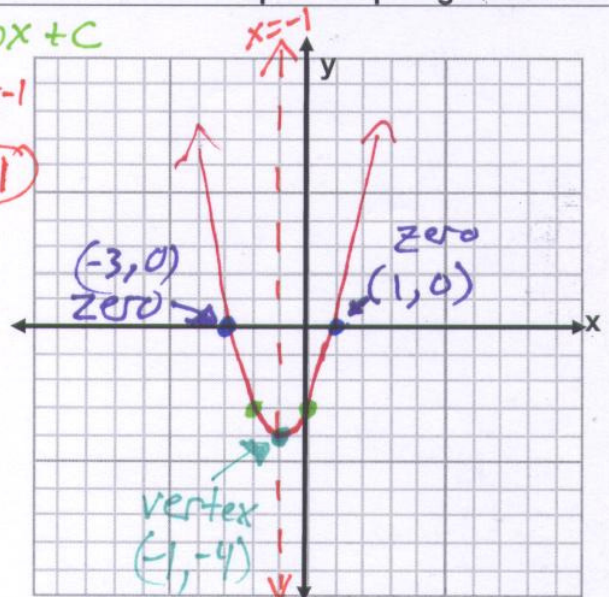
Topic: Graphing Quadratics

Graph and label the roots and vertex.

$y = x^2 + 2x - 3$

axis of symmetry $x = \frac{-b}{2a} = \frac{-(2)}{2(1)} = \frac{-2}{2} = -1$
 $x = -1$

X	Y	
1	0	$(1)^2 + 2(1) - 3 = 1 + 2 - 3 = 0$
0	-3	$(0)^2 + 2(0) - 3 = 0 + 0 - 3 = -3$
-1	-4	$(-1)^2 + 2(-1) - 3 = 1 - 2 - 3 = -4$
-2	-3	
-3	0	



Algebra 1 Benchmark 14.1

Topic: Solving Quadratic Equations by Factoring

1. Solve.

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

$$2x + 3 = 0$$

$$\quad \begin{matrix} -3 & -3 \end{matrix}$$

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

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

$$3x - 5 = 0$$

$$\quad \begin{matrix} +5 & +5 \end{matrix}$$

$$\frac{3x}{3} = \frac{5}{3}$$

$$\boxed{x = \frac{5}{3}}$$

2. Solve by factoring.

$x^2 + 4x = 32$

$-32 \quad -32$

$x^2 + 4x - 32 = 0$

$(x+8)(x-4) = 0$

$x+8=0$

$$\boxed{x = -8}$$

$x-4=0$

$$\boxed{x = 4}$$

$$\begin{array}{r} -32 \\ 8 \times -4 \\ \hline 4 \end{array}$$