

Convert quadratic standard form to root form using factoring trinomials.

$$y = ax^2 + bx + c \quad \text{to} \quad y = a(x - p)(x - q)$$

If a = 1

Example:  $y = 1x^2 - 11x + 24$

1) Write two sets of parentheses for binomials

$$y = 1x^2 - 11x + 24$$
$$y = ( \quad ) ( \quad )$$

2) If a=1, then the first term in both binomials is x

$$y = 1x^2 - 11x + 24$$
$$y = ( x \quad ) ( x \quad )$$

3) Find the positive integer factors of  $|a|$

$$24 = 1 \times 24$$
$$24 = 2 \times 12$$
$$24 = 3 \times 8$$
$$24 = 4 \times 6$$

4) If  $c$  is positive, determine which factors of  $|a|$  add up to  $|b|$ , write the factors in the binomials.

$$|b| = 11$$

$$1+24 = 25$$
$$2+12 = 14$$
$$3+8 = 11$$
$$4+6 = 10$$

$$y = 1x^2 - 11x + 24$$
$$y = ( x - 3 ) ( x - 8 )$$

5) If  $c$  is positive, both factors have the same sign as  $b$

$$y = 1x^2 - 11x + 24$$
$$y = ( x - 3 ) ( x - 8 )$$