

Algebra 1 8.6

Factor trinomials

X = answer Solve quadratic equations by factoring

quadratic

EWE

Factor

Zero product property

$$( \quad ) \cdot ( \quad ) = 0$$


Factor each polynomial.

1A.  $d^2 + 11d + 24$

$$\begin{array}{cc} & 1 \ 2 \ 4 \\ & \underline{2 \ 12} \\ & 3 \ 8 \\ & 4 \ 6 \end{array}$$

~~$\begin{array}{cc} 24 & \\ 3 & 8 \\ & 11 \end{array}$~~

$$(d + 3)(d + 8)$$

$$\text{b. } x^2 - 7x - 18 = 0$$

Factor vs solve

$$\begin{array}{r} -18 \\ -9 \quad 2 \\ -7 \end{array}$$

$$\begin{array}{r} 1 \quad 18 \\ 2 \quad 9 \\ 3 \quad 6 \end{array}$$

$$(x-9)(x+2) = 0$$

$$\begin{array}{r} x-9=0 \\ +9 \quad +9 \end{array}$$

$$x=9$$

$$\begin{array}{r} x+2=0 \\ -2 \quad -2 \end{array}$$

$$x=-2$$

$$j^2 - 9jk - 10k^2$$

$$(j+10k)(j-10k)$$

$$\begin{array}{r} -10 \\ 1 \quad -10 \\ -9 \end{array}$$

$$\begin{array}{r} 1 \quad 10 \\ 2 \quad 5 \end{array}$$

$$= 0$$

**Guided Practice**

**3A.**  $y^2 + 13y - 48$

$$= 0$$

**3B.**  $r^2 - 2r - 24 = 0$

$=$   
 $0$

---

$$x^2 + 5x + 6 = 0$$

$$x^2 + 17x + 60 = 0$$

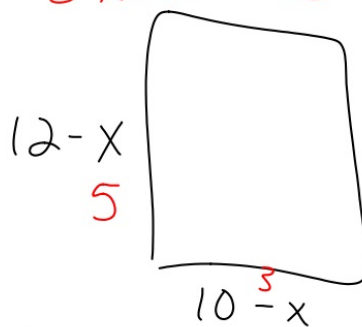
$$x^2 - 24x + 140 = 0$$

33.



$$\begin{array}{r} 12-x \\ 10-x \\ \hline -12x + x^2 \\ 120 - 10x \end{array}$$

5 x 3 inches



15

$$(12-x)(10-x) = 15$$

$$120 - 22x + x^2 = 15$$

$$x^2 - 22x + 105 = 0$$

$$(x-7)(x-15) = 0$$

$$\begin{array}{l} \downarrow \qquad \downarrow \\ x-7=0 \quad x-15=0 \end{array}$$

$$x=7$$

$$x=15$$

$$\begin{array}{r} 105 \\ -7 \\ \hline -15 \\ -22 \end{array}$$

$$\begin{array}{r} 1 \ 105 \\ 5 \ 21 \\ 3 \ 35 \\ 7 \ 65 \end{array}$$