

9.7 difference of 2 Squares

Opener!

Expand the following:

$$\textcircled{1} (x-2)(x+2)$$

$$x^2 + \cancel{2x} - \cancel{2x} - 4$$

$$x^2 - 4$$

Try factoring:

$$\textcircled{4} x^2 - 4$$

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

$$(x-2)(x+2)$$

$$\textcircled{2} (2a+3)(2a-3)$$

$$4a^2 - \cancel{6a} + \cancel{6a} - 9$$

$$4a^2 - 9$$

$$\textcircled{3} (1-2x^2)(1+2x^2)$$

$$1 + \cancel{2x^2} - \cancel{2x^2} - 4x^4$$

$$\boxed{1 - 4x^4}$$

$$\boxed{-4x^4 + 1}$$

$$\textcircled{5} 9 - b^2$$

$$-b^2 + 9$$

$$-1(b^2 + 0b - 9)$$

$$-1(b-3)(b+3)$$

$$\textcircled{6} w^2 - 1$$

$$(w-1)(w+1)$$

Difference of Two Squares

to use D.O.T.S.

① difference

② perfect squares

$$\text{general form: } a^2 - b^2 = (a+b)(a-b)$$

Practice!

$$\textcircled{1} 4x^2 - 25$$

$$(2x+5)(2x-5)$$

$$\textcircled{2} 36 - c^2$$

$$(6+c)(6-c)$$

$$\textcircled{3} 49k^2 - 81$$

$$(7k+9)(7k-9)$$

Take it a Step Further!

$$\textcircled{4} t^2 - 16 = 0$$

$$(t + 4)(t - 4) = 0$$

$$\begin{array}{cc} / & \backslash \\ t+4=0 & t-4=0 \end{array}$$

$$\begin{array}{cc} t = -4 & t = 4 \end{array}$$

$$\boxed{t = \pm 4}$$

$$\textcircled{5} 25 = 9m^2$$

$$0 = 9m^2 - 25$$

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

$$\begin{array}{cc} / & \backslash \\ 0 = 3m - 5 & 0 = 3m + 5 \\ +5 & +5 \quad -5 & -5 \end{array}$$

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

$$\frac{-5}{3} = \frac{3m}{3}$$

$$\boxed{m_1 = \frac{5}{3} \quad m_2 = -\frac{5}{3}}$$

$$\textcircled{6} 49y^4 - 4y^2 = 0$$

$$y^2(49y^2 - 4) = 0$$

$$y^2(7y + 2)(7y - 2) = 0$$

$$\begin{array}{ccc} / & | & \backslash \\ \sqrt{y^2} = 0 & 7y + 2 = 0 & 7y - 2 = 0 \\ & -2 -2 & +2 +2 \end{array}$$

$$y = 0$$

$$\frac{7y}{7} = \frac{-2}{7}$$

$$\frac{7y}{7} = \frac{2}{7}$$

$$\boxed{y = -\frac{2}{7}}$$

$$\boxed{y = \frac{2}{7}}$$