

Trinomials

* Multiply the following binomials:

1. $(x-2)(x+4)$
 $x^2 + 4x - 2x - 8$
 $x^2 + 2x - 8$

2. $(x-1)(x+5)$
 $x^2 + 5x - 1x - 5$
 $x^2 + 4x - 5$

* Factor the following trinomials:

#1. $x^2 + 2x - 8$ * Find two numbers that multiply to give you the constant (-8). $\frac{4}{4} \times \frac{-2}{-2} = -8$
 $(x+4)(x-2)$ * And two numbers that add to give you the numerical coefficient of x (+2). $\frac{4}{4} + \frac{-2}{-2} = +2$

#2. $x^2 + 4x - 5$ $\frac{5}{5} \times \frac{-1}{-1} = -5$
 $(x+5)(x-1)$ $\frac{5}{5} + \frac{-1}{-1} = +4$

Factoring Trinomials

$$\begin{array}{l} \#1 \quad x^2 - 5x + 6 \\ (x-3)(x-2) \end{array} \quad \begin{array}{l} \underline{-3} \times \underline{-2} = +6 \\ \underline{-3} + \underline{-2} = -5 \end{array}$$

$$\begin{array}{l} \#2 \quad y^2 + y - 72 \\ (y+9)(y-8) \end{array} \quad \begin{array}{l} \underline{9} \times \underline{-8} = -72 \\ \underline{9} + \underline{-8} = +1 \end{array}$$

$$\begin{array}{l} \#3 \quad w^2 + 16w + 39 \\ (w+13)(w+3) \end{array} \quad \begin{array}{l} \underline{13} \times \underline{3} = +39 \\ \underline{13} + \underline{3} = +16 \end{array}$$

$$\begin{array}{l} \#4 \quad x^2 - 6xy + 9y^2 \\ (x-3y)(x-3y) \end{array} \quad \begin{array}{l} \underline{-3} \times \underline{-3} = +9 \\ \underline{-3} + \underline{-3} = -6 \end{array}$$

#1 $x^2 - 12x + 20$

$$\begin{aligned} \underline{-10} \times \underline{-2} &= 20 \\ \underline{-10} + \underline{-2} &= -12 \end{aligned}$$

$$(x-10)(x-2)$$

#2 $y^2 + 9y + 18$

$$\begin{aligned} \underline{6} \times \underline{3} &= 18 \\ \underline{6} + \underline{3} &= 9 \end{aligned}$$

$$(y+6)(y+3)$$

#3 $y^2 - 9yz + 14z^2$

$$\begin{aligned} \underline{-7} \times \underline{-2} &= +14 \\ \underline{-7} + \underline{-2} &= -9 \end{aligned}$$

$$(y-7z)(y-2z)$$

#4 $h^2 - 33h - 34$

$$\begin{aligned} \underline{-34} \times \underline{1} &= -34 \\ \underline{-34} + \underline{1} &= -33 \end{aligned}$$

$$(h-34)(h+1)$$

#5

$m^2 - 19mn - 66n^2$

$$\begin{aligned} \underline{-22} \times \underline{3} &= -66 \\ \underline{-22} + \underline{3} &= -19 \end{aligned}$$

$$(m-22n)(m+3n)$$

