

Algebra /

Factoring a quadratic with leading coefficient 1

Help with signs:

Last sign is positive: both signs will be the same as the middle number.

Last sign is negative: signs will be different, the bigger numbers gets the same sign as the middle number.

	Last sign: +	Last sign: -	
Middle sign: +	Both: +	Bigger #: +	Smaller #: -
Middle sign: -	Both: -	Bigger #: -	Smaller #: +

$$\text{FOIL } (x+5)(x-2)$$

$$\begin{array}{r} x^2 - 2x \\ + 5x - 10 \\ \hline x^2 + 3x - 10 \end{array}$$

$$x^2 + 6x + 8$$

$$(x+2)(x+4)$$

$$\begin{array}{r} x^2 + 4x + 8 \\ + 2x + 8 \\ \hline x^2 + 6x + 16 \end{array}$$

$$\begin{array}{r} 8 \\ 1, 8 \\ 2, 4 \\ \hline 4 \end{array}$$

$$x^2 - 8x - 20$$

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

$$\begin{array}{r} -20 \\ -10 \times 2 \\ \hline -8 \end{array}$$

$$\begin{array}{r} 20 \\ 1, 20 \\ 2, 10 \\ \hline 4 \end{array}$$

$$x^2 + 5x - 6$$

$$(x-1)(x+6)$$

$$y^2 - 9y + 18$$

$$(y-3)(y-6)$$

FOIL to check answer

$$\begin{array}{r} 18 \\ 1, 18 \\ 2, 9 \\ \hline 4 \end{array}$$

what multiplies to be the last #
 what adds up to be the middle #

$$z^2 - 8z - 9$$

$$(z+1)(z-9)$$

$$\begin{array}{r} -9 \\ +1 \times -9 \\ \hline -8 \end{array}$$

$$x^2 + 12x + 20$$

$$(x+2)(x+10)$$

$$\begin{array}{r} 20 \\ +2 \times +10 \\ \hline +12 \end{array}$$

$$\begin{array}{r} 20 \\ 1, 20 \\ 2, 10 \\ \hline 4 \end{array}$$

$$x^2 - 9x + 20$$

$$(x-4)(x-5)$$

$$\begin{array}{r} -20 \\ -4 \times -5 \\ \hline -9 \end{array}$$

$$\begin{array}{r} 20 \\ 1, 20 \\ 2, 10 \\ \hline 4 \end{array}$$

$$y^2 + 6y - 16$$

$$(y-2)(y+8)$$

$$\begin{array}{r} -16 \\ -2 \times 8 = -16 \\ +2 \times 8 = +16 \\ \hline +6 \end{array}$$

$$x^2 - 9x - 36$$

$$(x - 12)(x + 3)$$

$$\begin{array}{cc} -36 & \\ -12 & +3 \\ -9 & \end{array}$$

$$\begin{array}{r} 36 \\ 1, 36 \\ 2, 18 \\ 3, 12 \\ 4, 9 \\ 5 \\ \hline 6, 6 \end{array}$$

Last -
 Different
 Bigger
 Same as
 Middle

#ExponentsAndPolynomials

Tags Archive RSS feed Youtube QR Code email akennon@fscj.edu with any issues on this website

Made with [Montaigne](#) and [bigmission](#) 