



Warm Up - Common factoring :)

1. $6x^3y^7z - 12x^7y^5 + 33x^4yz^3$

2. $45a^9b^4c^2 + 18a^4c^5 - 72a^3b^2c^2$

3. $17m^3n^4 - 5m^4n^8 + 3m^9n$

$$1. \quad \underline{6x^3y^7z^1} - \underline{12x^7y^5} + \underline{33x^4yz^3}$$
$$= 3x^3y^1(2y^6z^1 - 4x^4y^4 + 11x^1z^3)$$

$$2. \quad \underline{45a^9b^4c^2} + \underline{18a^4c^5} - \underline{72a^3b^2c^2}$$
$$= 9a^3c^2 (5a^6b^4 + 2a^1c^3 - 8b^2)$$

$$3. \quad 17m^3n^4 - 5m^4n^8 + 3m^9n^1$$

$$= m^3n^1 (17n^3 - 5m^1n^7 + 3m^6)$$

$$x^2 - 3x - 4$$

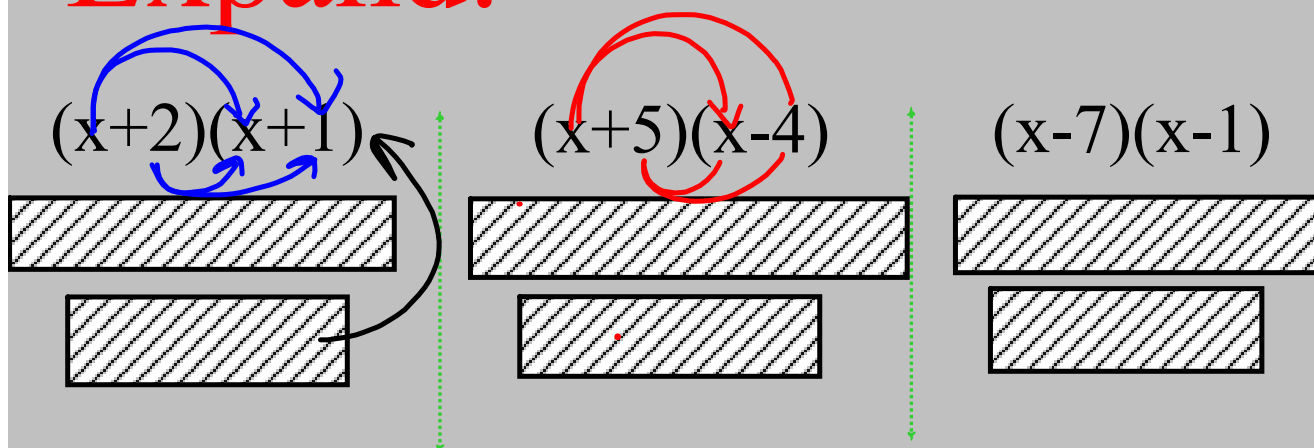
$$y^4 + 11y^2 + 30$$

TRINOMIALS

$$z^2 + 5zy + 6y^2$$

$$m^2 - 8m + 16$$

Expand:



Krow sdrawkcab



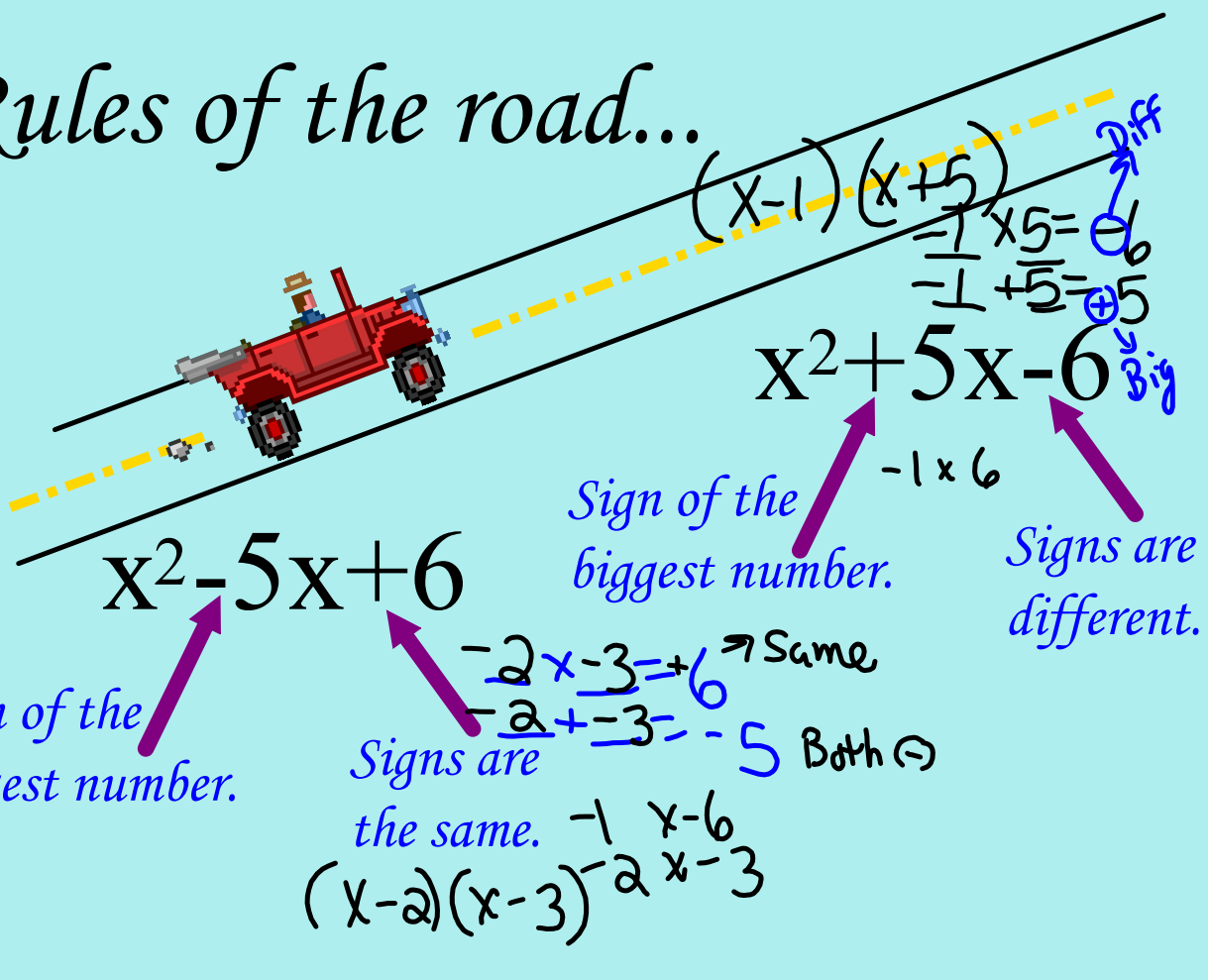
1. $x^2 + 19x + 18$

$$(x+1)(x+18)$$

$$\begin{array}{r} \underline{1} \times \underline{18} = +18 \\ \underline{1} + \underline{18} = +19 \end{array}$$

$$1 \times 18 = 18$$

Rules of the road...



$(x-1)(x+5)$

$-1 \times 5 = -5$ (Diff)

$-1 + 5 = +4$ (Big)

$x^2 + 5x - 6$

Sign of the biggest number. -1×6

Signs are different.

$x^2 - 5x + 6$

Sign of the biggest number.

Signs are the same.

$-2 \times -3 = +6$ Same

$-2 + -3 = -5$ Both \ominus

$(x-2)(x-3)$

-1×-6

-2×-3

$\begin{array}{r} \underline{-4} \\ \underline{-4} \end{array} \times \begin{array}{r} \underline{6} \\ \underline{6} \end{array} = \textcircled{-24} \text{ DIFF}$ $\begin{array}{r} \underline{-4} \\ \underline{-4} \end{array} + \begin{array}{r} \underline{6} \\ \underline{6} \end{array} = \textcircled{+2} \text{ Big } \oplus$ $(X-4)(X+6)$	$\begin{array}{r} \underline{-5} \\ \underline{-5} \end{array} \times \begin{array}{r} \underline{4} \\ \underline{4} \end{array} = \textcircled{-20} \text{ DIFF}$ $\begin{array}{r} \underline{-5} \\ \underline{-5} \end{array} + \begin{array}{r} \underline{4} \\ \underline{4} \end{array} = \textcircled{-1} \text{ Big } \ominus$
$\begin{array}{r} \underline{-5} \\ \underline{-5} \end{array} \times \begin{array}{r} \underline{-5} \\ \underline{-5} \end{array} = \textcircled{+25} \text{ Same}$ $\begin{array}{r} \underline{-5} \\ \underline{-5} \end{array} + \begin{array}{r} \underline{-5} \\ \underline{-5} \end{array} = \textcircled{-10} \text{ Both } \ominus$ $(X-5)(X-5)$	$\begin{array}{r} \underline{-6} \\ \underline{-6} \end{array} \times \begin{array}{r} \underline{-6} \\ \underline{-6} \end{array} = \textcircled{+36} \text{ Same}$ $\begin{array}{r} \underline{-6} \\ \underline{-6} \end{array} + \begin{array}{r} \underline{-6} \\ \underline{-6} \end{array} = \textcircled{-12} \text{ Both } \ominus$
$\begin{array}{r} \underline{-4} \\ \underline{-4} \end{array} \times \begin{array}{r} \underline{2} \\ \underline{2} \end{array} = \textcircled{-8} \text{ DIFF}$ $\begin{array}{r} \underline{-4} \\ \underline{-4} \end{array} + \begin{array}{r} \underline{2} \\ \underline{2} \end{array} = \textcircled{+2} \text{ Big } \ominus$ $(X-4)(X+2)$	$\begin{array}{r} \underline{-9} \\ \underline{-9} \end{array} \times \begin{array}{r} \underline{5} \\ \underline{5} \end{array} = \textcircled{-45} \text{ DIFF}$ $\begin{array}{r} \underline{-9} \\ \underline{-9} \end{array} + \begin{array}{r} \underline{5} \\ \underline{5} \end{array} = \textcircled{-4} \text{ Big } \ominus$
$\begin{array}{r} \underline{2} \\ \underline{2} \end{array} \times \begin{array}{r} \underline{-15} \\ \underline{-15} \end{array} = \textcircled{-30} \text{ DIFF}$ $\begin{array}{r} \underline{2} \\ \underline{2} \end{array} + \begin{array}{r} \underline{-15} \\ \underline{-15} \end{array} = \textcircled{-13} \text{ Big } \ominus$ $(X+2)(X-15)$	$\begin{array}{r} \underline{-3} \\ \underline{-3} \end{array} \times \begin{array}{r} \underline{-5} \\ \underline{-5} \end{array} = \textcircled{+15} \text{ Same}$ $\begin{array}{r} \underline{-3} \\ \underline{-3} \end{array} + \begin{array}{r} \underline{-5} \\ \underline{-5} \end{array} = \textcircled{-8} \text{ Both } \ominus$