

Solve $6x^2 - x = 12$

1) Set = to zero.

2) Factor.*

3) Solve.

$$6x^2 - x = 12$$

Longer Factor is Negative

$$6x^2 - 1x - 12 = 0$$

split

$$(6x^2 - 9x) + (8x - 12) = 0$$
$$3x(2x - 3) + 4(2x - 3) = 0$$
$$(2x - 3)(3x + 4) = 0$$

$$2x - 3 = 0 \quad \text{OR} \quad 3x + 4 = 0$$
$$\begin{array}{r} +3 \quad +3 \\ \hline 2x = 3 \end{array} \quad \text{OR} \quad \begin{array}{r} -4 \quad -4 \\ \hline 3x = -4 \end{array}$$

$$\frac{2x}{2} = \frac{3}{2} \quad \frac{3x}{3} = \frac{-4}{3}$$

$$x = \frac{3}{2} \quad \text{OR} \quad x = \frac{-4}{3}$$

* Factor

• Mult. leading coefficient and constant

$6 \cdot -12$ $= -72$	Sum
1 - 72	-71
2 - 36	-34
3 - 24	-21
4 - 18	-14
6 - 12	-6
8 - 9	-1

• Group
• Factor GCF