

Factoring B1

11/15/11

$$x^2 - 2x - 3 = 0$$

Roots
(Solutions)
(Zeros)

$$\begin{array}{l} (x+1)(x-3) = 0 \\ x^2 - 3x + x - 3 \\ \hline x^2 - 2x - 3 \end{array}$$

$$\begin{array}{l} x+1 = 0 = \textcircled{1} \\ x-3 = 0 = \textcircled{3} \end{array}$$

Product Sum T

ac	b
-3	-2
3, -1	2
-3, 1	-2

$$\begin{array}{l} x^2 - 2x - 3 = \textcircled{0} \\ ax^2 + bx + c \\ 1 \quad -2 \quad -3 \end{array}$$

What two numbers when multiplying get -3, but when combined get -2

$$\begin{array}{l} \text{group} \\ (x^2 - 3x) + (1x - 3) \\ \textcircled{x}(x-3) + \textcircled{1}(x-3) \end{array}$$

$$\begin{array}{l} x-3 = 0 \\ x+1 = 0 \\ x = 3, x = -1 \end{array}$$

Rewrite as 4 terms

$$x^2 - 3x + x - 2$$

$$\text{find } x \textcircled{(x-3)} \quad | \quad \textcircled{(x-3)}$$

GCF

$$\text{factors } \begin{pmatrix} x+1 \\ x-3 \end{pmatrix}$$

set factors $\Rightarrow 0$
Then solve for x

$$x^2 - 2x - 24$$

ac	b
-24	-2
-1, 24	