

## 1.5 $\Rightarrow$ Solve by Factoring

1.  $x^2 + 6x + 5 = 0$

$$x = -5, -1$$

\*Trinomial  
a=1\*

$$(x+5)(x+1) = 0$$
$$x+5=0 \quad x+1=0$$
$$x=-5 \quad x=-1$$

2.  $2x^2 + 3x = 9$

$$x = \frac{3}{2}, -3$$

\*Trinomial  
a>1\*

$$2x^2 + 3x - 9 = 0$$
$$(2x-3)(x+3) = 0$$
$$2x-3=0 \quad x+3=0$$
$$2x=3 \quad x=-3$$
$$x=\frac{3}{2}$$

3.  $6x^2 - 24x = 0$

$$x = 0, 4$$

\*GCF\*

$$6x(x-4) = 0$$
$$6x=0 \quad x-4=0$$
$$x=0 \quad x=4$$

$$4. \quad x^2 - 81 = 0$$

**\* DOTS \***

$$(x+9)(x-9) = 0$$
$$x+9=0 \quad x-9=0$$
$$x=-9 \quad x=9$$

$$x = \pm 9$$

or

$$x = -9, 9$$

$$5. \quad 16x^2 + 49 = 0$$

**\* SOTS \***

$$(4x+7i)(4x-7i) = 0$$
$$4x+7i=0 \quad 4x-7i=0$$
$$4x=-7i \quad 4x=7i$$
$$x = -\frac{7}{4}i \quad x = \frac{7}{4}i$$

$$x = \pm \frac{7}{4}i$$

or

$$x = -\frac{7}{4}i, \frac{7}{4}i$$

$$6. \quad 2x^2 + 24 = x^2 - 11x$$
$$\begin{array}{r} -x^2 + 11x \\ \hline \end{array}$$

**\* Set = 0**

**\* Trinomial**

**a=1 \***

$$x^2 + 11x + 24 = 0$$
$$(x+8)(x+3) = 0$$
$$x+8=0 \quad x+3=0$$
$$x=-8 \quad x=-3$$

$$x = -8, -3$$