

Solving by Factoring

★ Solutions, x-intercepts, zeros, roots

$$\textcircled{1} \quad x^2 - 81 = 0$$
$$(x+9)(x-9) = 0$$

$$x+9=0 \quad x-9=0$$
$$\begin{array}{r} +9 \quad -9 \\ \hline x = -9 \end{array} \quad \begin{array}{r} +9 \quad +9 \\ \hline x = 9 \end{array}$$

$$\textcircled{2} \quad 3x^2 - 3x - 6 = 0$$
$$3(x^2 - x - 2) = 0$$
$$3(x-2)(x+1) = 0$$

M to -2	Add
-2, 1	-1
	= 1

$$\cancel{3=0} \quad x-2=0 \quad x+1=0$$
$$\boxed{x=2} \quad \boxed{x=-1}$$

$$\textcircled{3} \quad x^2 - 3x - 20 = 8$$
$$x^2 - 3x - 28 = 0$$
$$(x-7)(x+4) = 0$$

$$x-7=0 \quad x+4=0$$
$$\boxed{x=7} \quad \boxed{x=-4}$$

$$\textcircled{4} \quad 8x^2 - 4x = 0$$
$$4x(2x-1) = 0$$

$$\cancel{4x} \quad 4x=0 \quad \boxed{x=0}$$
$$\cancel{2x-1} \quad 2x-1=0$$
$$\frac{2x}{2} = \frac{1}{2} \quad \boxed{x = \frac{1}{2}}$$