

- ❖ Show all work
- ❖ No notes, books, or calculators allowed.
- ❖ Write answers in lowest terms when possible

Solve the equations for x .

1. $2x^2 + 2x - 24 = 0$

$$2(x^2 + x - 12) = 0$$

$$x^2 + x - 12 = 0$$

$$(x+4)(x-3) = 0$$

$$x+4=0$$

$$x-3=0$$

$$\boxed{x = -4}$$

$$\boxed{x = 3}$$

2. $8x^2 + 32 = 32x$

$$x^2 + 4 = 4x \quad \leftarrow \begin{array}{l} \text{divide all terms} \\ \text{by 8 to get this} \end{array}$$

$$x^2 - 4x + 4 = 0$$

$$(x-2)^2 = 0$$

$$x-2=0 \rightarrow \boxed{x=2}$$

3. $x(x+9) = 6(x+3)$

$$x^2 + 9x = 6x + 18$$

$$x^2 + 3x - 18 = 0$$

$$(x+6)(x-3) = 0$$

$$x+6=0$$

$$x-3=0$$

$$\boxed{x = -6}$$

$$\boxed{x = 3}$$