

1. Solve $x^2 + 3x = 0$.

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

Answer: $x = 0$ or -3

2. Solve $x^2 - 16 = 0$.

$$(x + 4)(x - 4)$$

Answer: $x = 4$ or -4

3. Solve $x^2 - 5x - 6 = 0$.

$$(x - 6)(x + 1)$$

Answer: $x = 6$ or -1

4. Solve $x^2 = 5x$.

$$\text{Move over: } x^2 - 5x = 0; x(x - 5)$$

Answer: $x = 0$ or 5

5. Solve $2x^2 - 8 = 0$.

$$2(x^2 - 4) = 0; (x+2)(x-2)$$

Answer: $x = 2$ or -2

6. Solve $x^2 + 7x + 10 = 0$.

$$(x + 2)(x + 5)$$

Answer: $x = -2$ or -5

7. Solve $x^2 - 10x + 25 = 0$. (Perfect square - one answer!)

$$(x - 5)^2 = 0$$

Answer: $x = 5$ (double root)

8. Solve $3x^2 + 15x = 0$.

$$3x(x + 5) = 0$$

Answer: $x = 0$ or -5

9. Solve $2x^2 + 5x - 3 = 0$. ★ challenge

$$ac = -6: 6x - x$$

$$(2x - 1)(x + 3)$$

Answer: $x = 1/2$ or -3

10. A rectangle's area is $x^2 + 3x - 40 = 0$ at its zeros. Solve, then explain why only one zero is a valid length

$$(x + 8)(x - 5) = 0$$

$x = -8$ or 5 ; length can't be negative

Answer: $x = 5$ (only positive length)