

Discriminant (A)

$$b^2 - 4ac > 0 \text{ means 2 solutions}$$

$$b^2 - 4ac = 0 \text{ means 1 solution}$$

$$b^2 - 4ac < 0 \text{ means no solutions}$$

For the equation $8x^2 + 8x + 2 = 0$, use the discriminant to determine the number of distinct real solutions.

$$a = 8, b = 8, c = 2$$

$$b^2 - 4ac = (8)^2 - 4(8)(2)$$

$$= 64 - 64$$

$$= 0$$

1 solution

For the equation $x^2 - 4x - 7 = 0$, use the discriminant to determine the number of distinct real solutions.

$$a = 1, b = -4, c = -7$$

$$b^2 - 4ac = (-4)^2 - 4(1)(-7)$$

$$= 16 + 28$$

$$= 44$$

2 solutions