

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

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

$$D = b^2 - 4ac$$

$$D = (-4)^2 - 4(1)(4)$$

$$D = 16 - 16$$

$$D = 0$$

1 real, repeated root

$$x^2 + 2x + 6 = 0$$

$$a = 1, b = 2, c = 6$$

$$D = b^2 - 4ac$$

$$D = (2)^2 - 4(1)(6)$$

$$D = 4 - 24$$

$$D = -20$$

2 complex roots

$$x^2 - 9 = 0$$

$$a = 1, b = 0, c = -9$$

$$D = b^2 - 4ac$$

$$D = (0)^2 - 4(1)(-9)$$

$$D = 0 + 36$$

$$D = 36$$

2 real roots