

Date : 04-25-19

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

$$\therefore x = \frac{-4 \pm \sqrt{16 - 4(1)(2)}}{2(1)}$$

$$= \frac{-4 \pm \sqrt{16 - 8}}{2}$$

$$= \frac{-4 \pm \sqrt{8}}{2} = \frac{-4 \pm 2\sqrt{2}}{2} = \boxed{-2 \pm \sqrt{2}}$$

$$a = 1$$

$$b = 4$$

$$c = 2$$

3. Quadratic Formula :

$$\text{if } ax^2 + bx + c = 0$$

$$\text{then, } x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Web assign problem 10.

$$36x^2 + 24x - 9 = 0$$

$$\therefore x = \frac{-24 \pm \sqrt{(24)^2 - 4(36)(-9)}}{2(36)}$$

$$= \frac{-24 \pm \sqrt{579 + 1296}}{72}$$

$$= \frac{-24 \pm \sqrt{1872}}{72}$$

$$a = 36$$

$$b = 24$$

$$c = -9$$

$$\# 3x + 4x^2 - 3 = 0$$

$$\Rightarrow 4x^2 + 3x - 3 = 0$$

$$x = \frac{-3 \pm \sqrt{9 - 4(4)(-3)}}{2 \cdot 4}$$

$$= \frac{-3 \pm \sqrt{9 + 48}}{8}$$

$$= \frac{-3 \pm \sqrt{57}}{8}$$

$$a = 4$$

$$b = 3$$

$$c = -3$$

The Discriminant and its implications:

$$\rightarrow b^2 - 4ac$$

1) Positive \rightarrow 2 Real # Solutions.

2) Zero \rightarrow 1 Real Solution, repeated
Perfect Squares.

~~3)~~ How many real no. solⁿ \rightarrow One

3) Neg. \rightarrow 0 Real # Solutions

$$\# \quad 9 + 2.5x - 8.2x^2 \geq 0$$

$$\Rightarrow -8.2x^2 + 2.5x + 9 \geq 0$$

$$a = -8.2$$

$$b = 2.5$$

$$c = 9$$

$$b^2 - 4ac$$

$$= (2.5)^2 - 4(-8.2)(9)$$

$$\text{discr.} \quad \frac{6.25 + 295.2}{} = \frac{301.45}{}$$

How many real no. sol'n \rightarrow 2

$$\# \quad x^2 + 10x + 20 = 0$$

D Solve it.

$$a = 1$$

$$b = 10$$

$$c = 20$$

$$x = \frac{-10 \pm \sqrt{100 - 4(1)(20)}}{2(1)}$$

$$= \frac{-10 \pm \sqrt{100 - 80}}{2} = \frac{-10 \pm \sqrt{20}}{2} \rightarrow \text{discriminant}$$

$$= \frac{-10 \pm 2\sqrt{5}}{2}$$

$$= \boxed{-5 \pm \sqrt{5}}$$

2) # of Real solⁿ \rightarrow $\boxed{2}$