9.3 $ax^2+bx+c=0$ Standard Form

$x^2+5x=-8$ (+8 +8)

$x^2+5x+8=0$

$x=-3$ Not a Solution

① Substitute

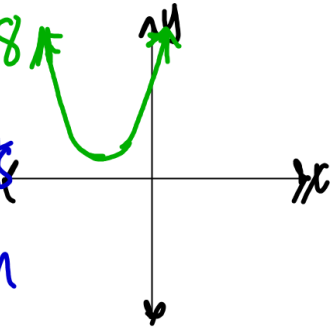
$(-3)^2+5(-3)+8=0$

$9-15+8=0$

$2\neq 0$

② Graph

$f(x)=x^2+5x+8$



No x-intercepts

No Solution

$x^2 - 7x - 8 = 0$ $x = 8$

① Substitute

$8^2 - 7(8) - 8 = 0$

$64 - 56 - 8 = 0$

$0 = 0$ True

Yes 8 is a solution

② Graph

$f(x) = x^2 - 7x - 8$

x-intercept at 8

yes 8 is a solution

③ Factor $x^2 - 7x - 8 = 0$ $1 \cdot 8$ $2 \cdot 4$

$(x+1)(x-8) = 0$

$x + 1 = 0$ $x - 8 = 0$

$x = -1$ $x = 8$

$(-1, 0)$ $(8, 0)$

$y = 8x^2 + 2x + 3$

x	y	
-2	31	32-4+3
-1	9	8-2+3
0	3	
1	13	8+2+3
2		

Vertex

$x = \frac{-b}{2a}$

$x = \frac{-2}{2(8)}$

$x = \frac{-2}{16}$

$x = \frac{-1}{8}$

$8x^2 + 2x + 3$

$8\left(\frac{-1}{8}\right)^2 + 2\left(\frac{-1}{8}\right) + 3$

$8\left(\frac{1}{64}\right) - \frac{1}{4} + 3$

$\frac{1}{8} - \frac{2}{8} + 3$

$-\frac{1}{8} + 3$

$2\frac{7}{8}$

$\left(-\frac{1}{8}, 2\frac{7}{8}\right)$

$$x^2 + 6x + 9 = 0$$

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

$$x+3=0 \quad x+3=0$$

$$x=-3 \quad x=-3$$

One Solution