

Precalculus - BE (Monday 5-3-10)

① Solving systems of linear equations in general, except for the special cases of parallel lines, means 1 solution $\Rightarrow$ where the lines cross.

A system of 2 second degree equations (A conic) could have how many solutions?

Hint: See Ch. 10-8 Pg 678-679

HW/CW $\Rightarrow$ Worksheet (ID 3)

$$\textcircled{E} \begin{cases} x^2 + y^2 - 17x - 3y - 38 = 0 \\ 2x + y + 4 = 0 \end{cases}$$

$$y = -4 - 2x \quad \text{SUBSTITUTE}$$

$$\begin{aligned} &(-4-2x)(-4-2x) \\ &16 + 8x + 4x^2 \end{aligned}$$

$$x^2 + (-4-2x)^2 - 17x - 3(-4-2x) - 38 = 0$$

$$\underline{x^2} + 16 + 16x + \underline{4x^2} - 17x + 12 + 6x - 38 = 0$$

$$5x^2 + 5x - 10 = 0$$

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

$$\text{Sum} \Rightarrow b \Rightarrow 1$$

$$\text{prod} \Rightarrow ac \Rightarrow -2$$

$$\begin{array}{c} 1 \\ -1 + 2 \end{array}$$

$$5(x-1)(x+2) = 0 \quad \therefore x = 1, -2$$

$$\text{If } x = 1, y = -6 \quad \text{If } x = -2, y = 0$$

$$\therefore \text{SOLUTION} \Rightarrow \boxed{(1, -6), (-2, 0)}$$

$$\text{OR we QF} \Rightarrow x = \frac{-b \pm \sqrt{d}}{2a} \quad \text{where } d = b^2 - 4ac$$