

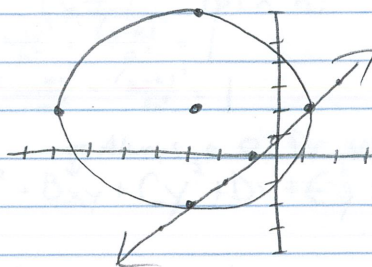
4-1

## Solving Systems of Conics

To solve by graphing: graph them both, see where they intersect

$$(x+3)^2 + (y-2)^2 = 16$$

$$\begin{aligned} x - y &= -1 \\ y &= x + 1 \end{aligned}$$



$$\begin{aligned} (1, 2) \\ (-3, -2) \end{aligned}$$

To solve algebraically: Solve one equation for  $x$  or  $y$ , then plug that into the other equation to finish solving.

$$(x+1)^2 + (y+2)^2 = 16$$

$$\begin{aligned} x - y &= -3 \\ y &= x + 3 \end{aligned}$$

$$(x+1)^2 + (x+3+2)^2 = 16$$

$$(x+1)^2 + (x+5)^2 = 16$$

$$x^2 + 2x + 1 + x^2 + 10x + 25 = 16$$

$$2x^2 + 12x + 26 = 16$$

$$2x^2 + 12x + 10 = 0$$

$$x^2 + 6x + 5 = 0$$

$$(x+5)(x+1) = 0$$

$$x = -5, x = -1$$

$$\begin{aligned} (-1, 2) \\ (-5, -2) \end{aligned}$$

You can get 1, 2, or 0 answers

cw/hw - wkshk