

For each equation:

- (a) Determine the type of conic
- (b) Write in standard form

ellip 1.  $9x^2 + 4y^2 - 18x + 16y - 119 = 0$

$$\frac{(x-1)^2}{16} + \frac{(y+2)^2}{36} = 1$$

circle 2.  $x^2 + y^2 - 4x - 6y - 23 = 0$

hypo 3.  $16x^2 - 9y^2 + 32x + 54y - 209 = 0$

$$\frac{(x+1)^2}{9} - \frac{(y-3)^2}{16} = 1$$

par 4.  $x^2 + 4x - 8y + 20 = 0$

par 5.  $y^2 + 12x + 4y + 28 = 0$

$$(y+2)^2 = -12(x+2)$$

ellip 6.  $4x^2 + 25y^2 + 16x + 250y + 541 = 0$

circle 7.  $x^2 + y^2 + 2x - 6y = 0$

$$(x+1)^2 + (y-3)^2 = 10$$

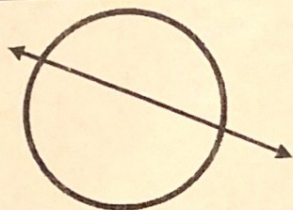
hyper 8.  $y^2 - x^2 + 2x - 6y - 8 = 0$

ellip 9.  $9x^2 + 4y^2 - 90x + 8y + 228 = 0$

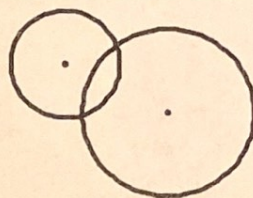
$$\frac{9(x-5)^2}{1} + \frac{4(y+1)^2}{1} = 1$$

par 10.  $x^2 - 6x - 2y + 7 = 0$

Intersection between a line and circle

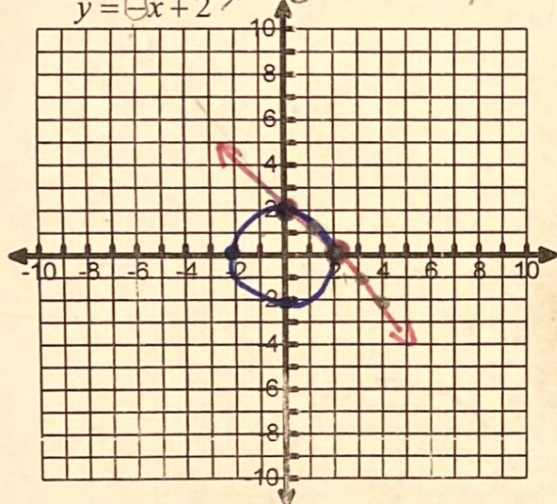


Intersection between two circles

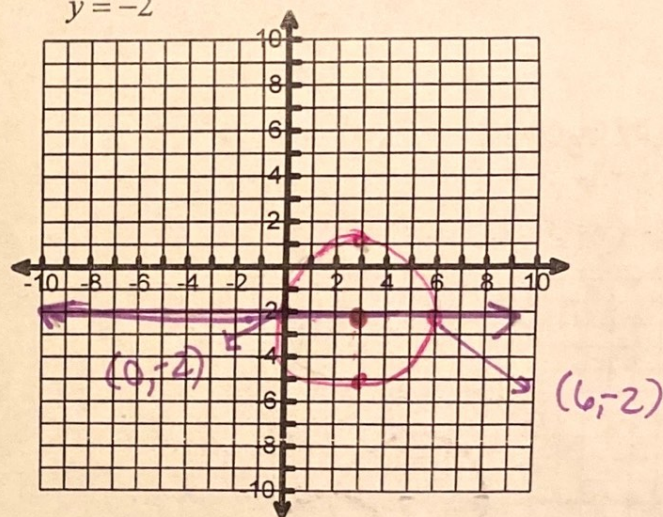


Solve by Graphing:

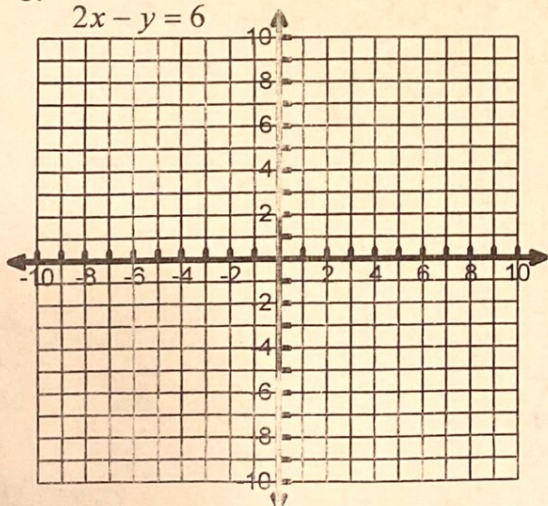
1.  $x^2 + y^2 = 4$  (circle)  $y = -x + 2$  (line)  $(0,2), (2,0)$



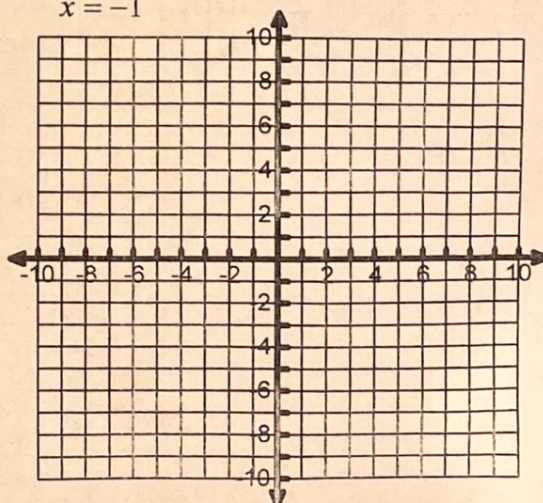
2.  $(x-3)^2 + (y+2)^2 = 9$  (circle)  $y = -2$  (line)



3.  $x^2 + y^2 = 4$  (circle)  $2x - y = 6$  (line)



4.  $(x+1)^2 + (y+2)^2 = 16$  (circle)  $x = -1$  (line)



**Solve Algebraically:**

5.  $x^2 + (y-1)^2 = 26$   
 $x = -1$

6.  $x^2 + y^2 = 34$   
 $x - y = 2$

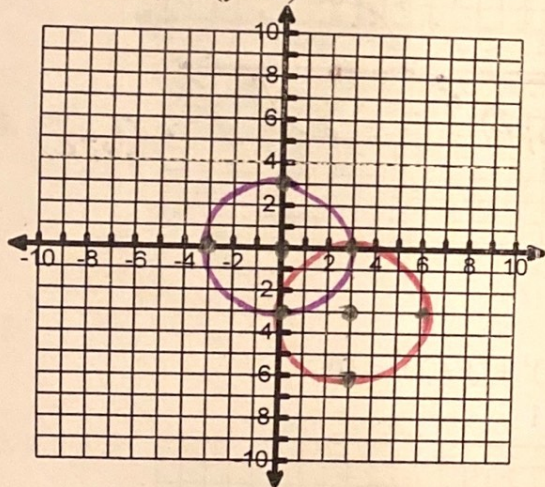
7.  $x^2 + y^2 = 25$   
 $2x + y = 10$

points of  
 intersection:  
 $(1, 4), (1, -4)$

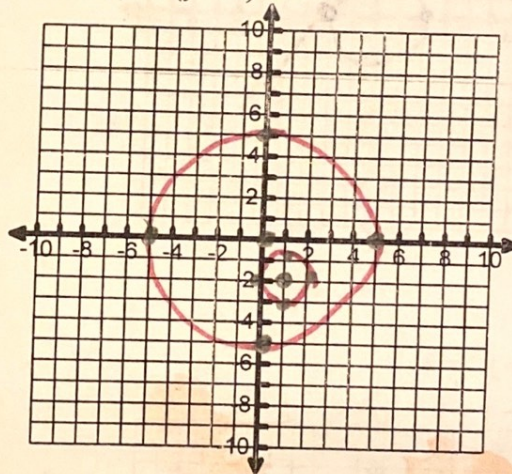
$(5, 3), (-3, -5)$

**Solve by Graphing:**

8.  $x^2 + y^2 = 9$   
 $(x-3)^2 + (y+3)^2 = 9$



9.  $x^2 + y^2 = 25$   
 $(x-1)^2 + (y+2)^2 = 1$



10.  $(x-2)^2 + y^2 = 16$  ✖  
 $(x-2)^2 + (y+5)^2 = 1$

