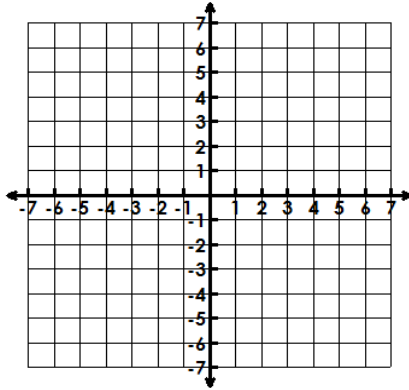


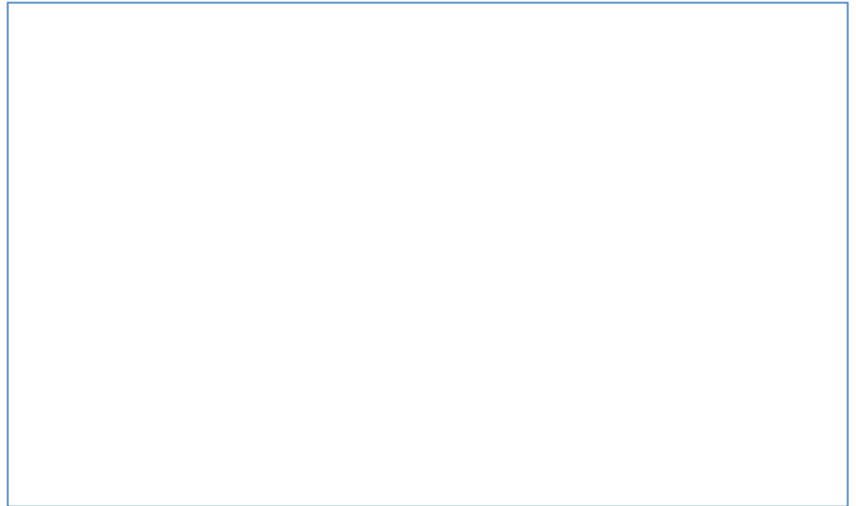
Homework 4.4 Systems of Conics, Parabolas & Lines

Graph the system, solve the system algebraically, and state the point(s) of intersection. Show all your work.

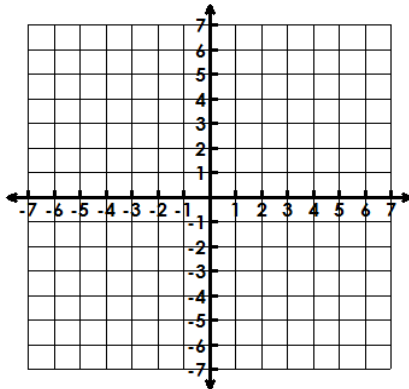
1.
$$\begin{cases} (x - 3)^2 + (y + 2)^2 = 9 \\ y = -5 \end{cases}$$



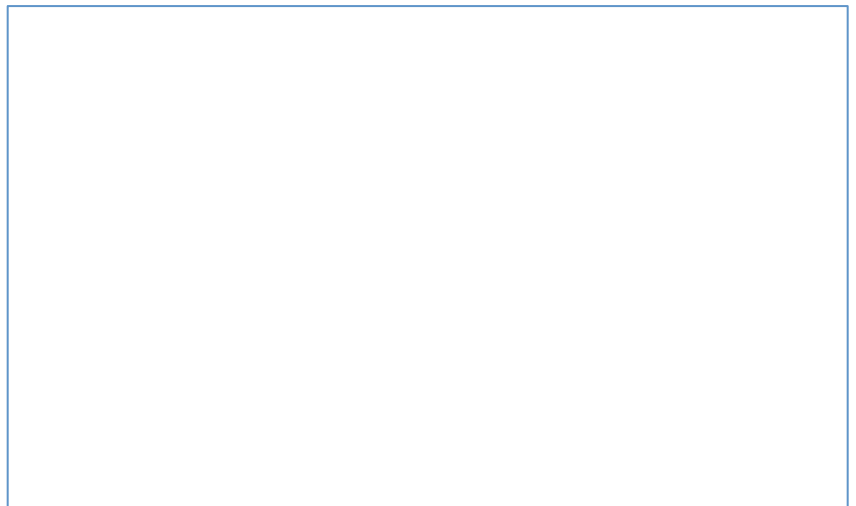
Point(s) of Intersection: _____



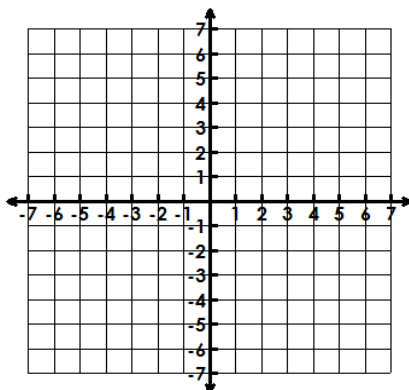
2.
$$\begin{cases} x^2 + y^2 = 9 \\ y = -x + 3 \end{cases}$$



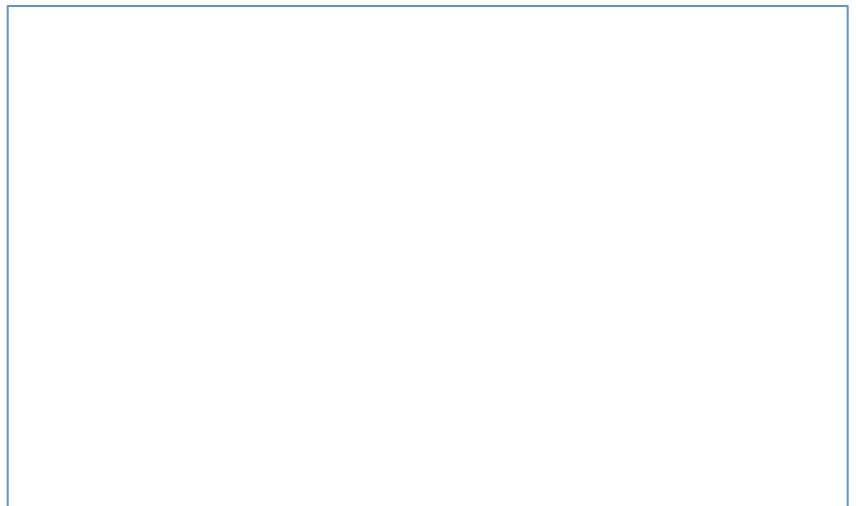
Point(s) of Intersection: _____



3.
$$\begin{cases} y = 2(x - 1)^2 + 2 \\ y = x + 2 \end{cases}$$

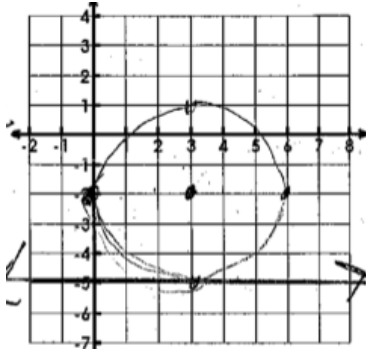


Point(s) of Intersection: _____

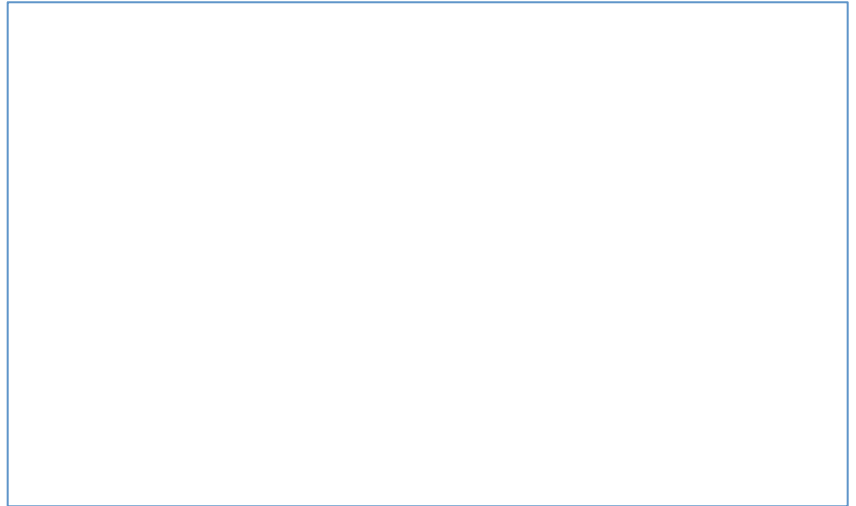


Graph the system, solve the system algebraically, and state the point(s) of intersection. Show all your work.

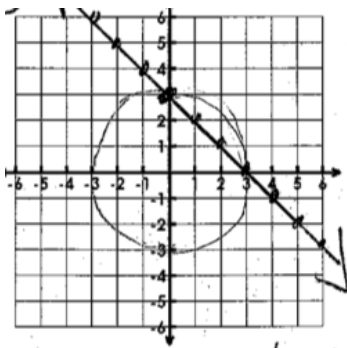
$$1. \begin{cases} (x - 3)^2 + (y + 2)^2 = 9 \\ y = -5 \end{cases}$$



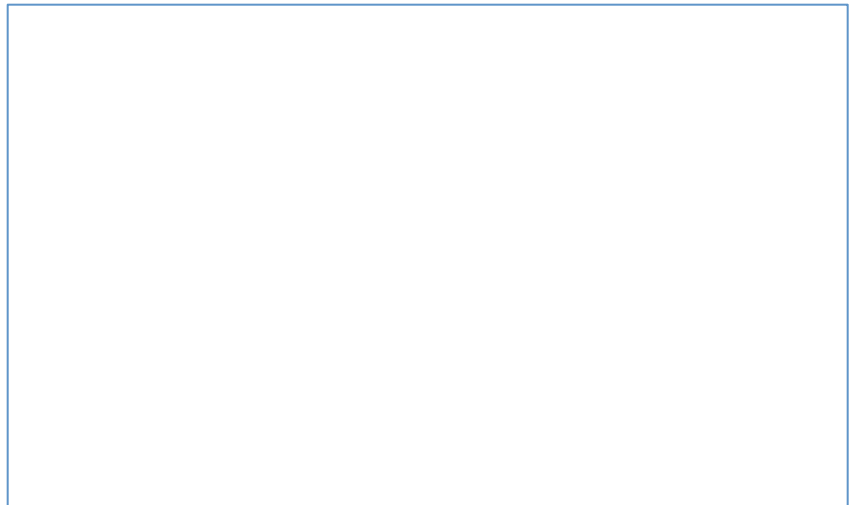
Point(s) of Intersection: (3, -5)



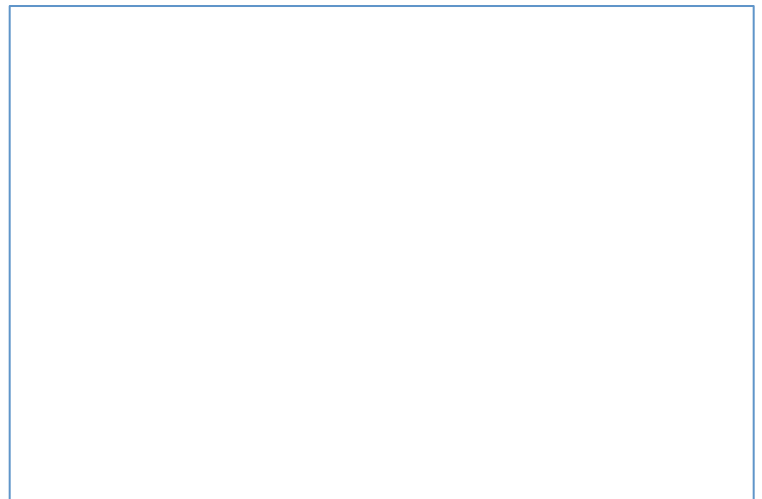
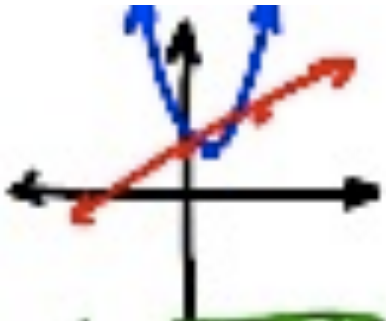
$$2. \begin{cases} x^2 + y^2 = 9 \\ y = -x + 3 \end{cases}$$



Point(s) of Intersection: (0, 3) and (3, 0)



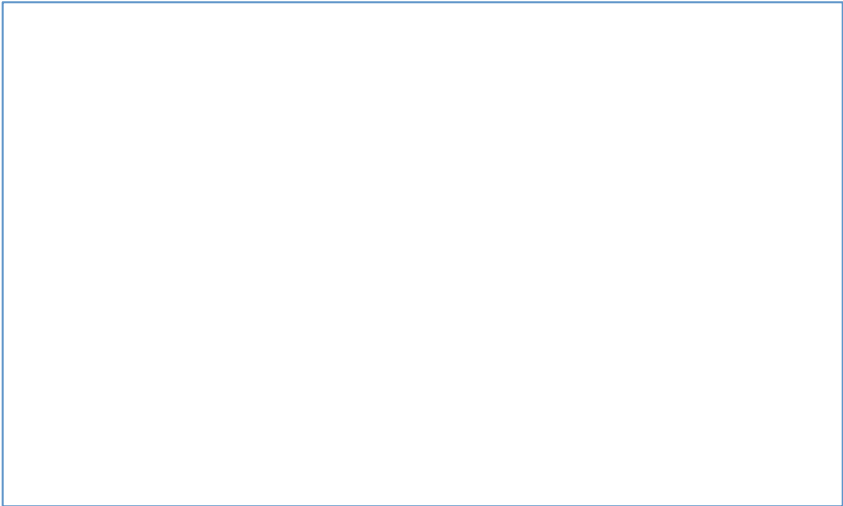
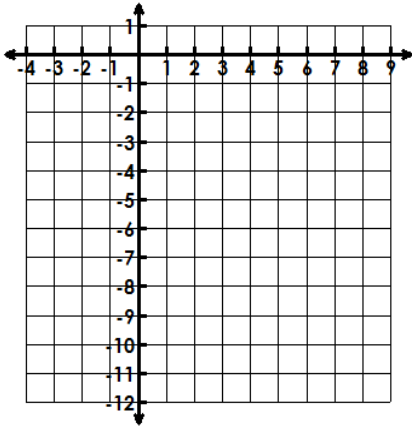
$$3. \begin{cases} y = 2(x - 1)^2 + 2 \\ y = x + 2 \end{cases}$$



Point(s) of Intersection: $(1/2, 5/2)$ and $(2, -4)$

Homework 4.4 Systems of Conics, Parabolas & Lines (Page 2)

4. $\begin{cases} (x + 2)^2 + y^2 = 9 \end{cases}$

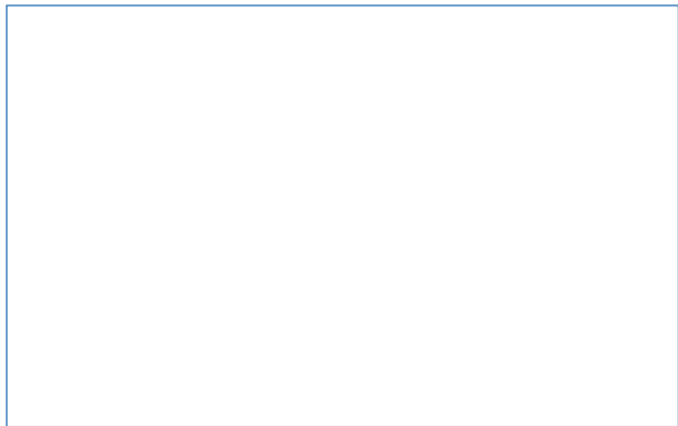
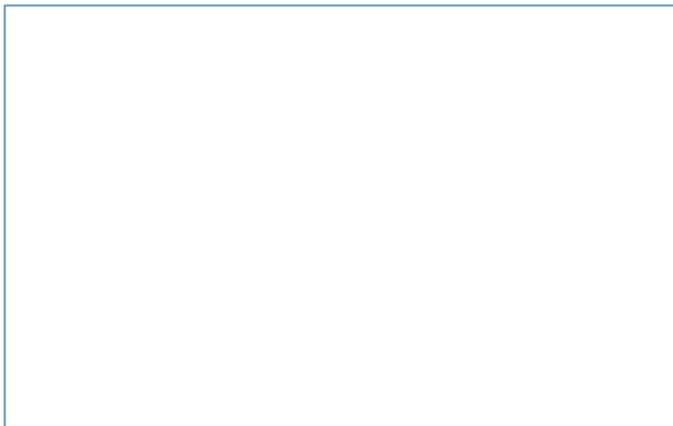


Point(s) of Intersection: _____

Find the common points by solving algebraically. Show all your work.

5. $\begin{cases} (x + 2)^2 + y^2 = 9 \\ x = 1 \end{cases}$

6. $\begin{cases} (x + 2)^2 + y^2 = 9 \\ x = 1 \end{cases}$

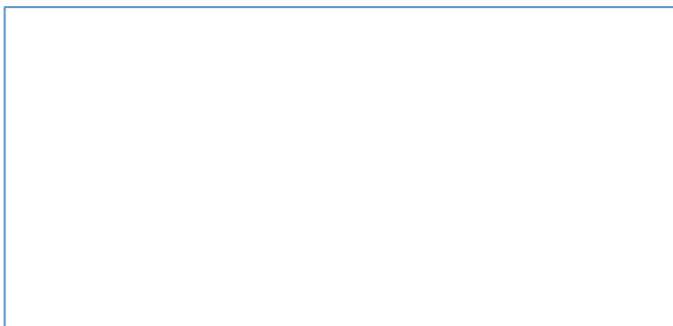


A circle is centered at the origin and has a radius of $2\sqrt{5}$ units. A line with a slope of 3 passes through the origin and intersects the circle in two places. Where does the line intersect the circle?

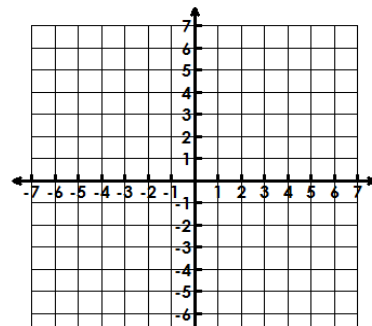
7. Write the equation of the circle: _____

8. Write the equation of the line: _____

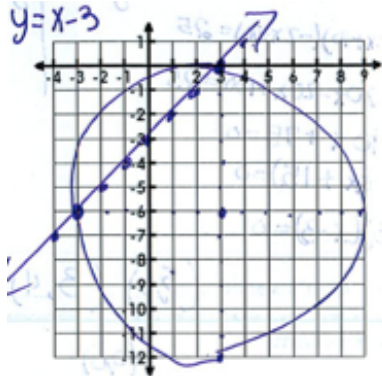
9. Find points of intersections algebraically:



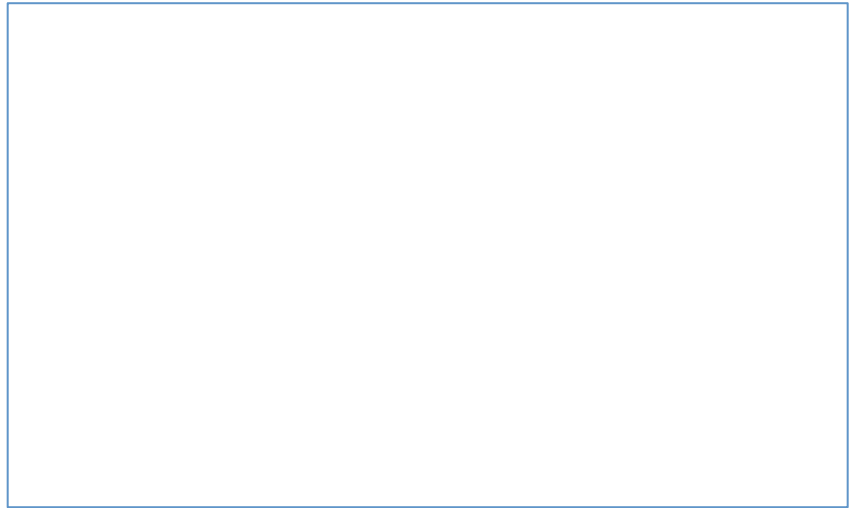
10. Find common points graphically:



$$4. \begin{cases} (x - 3)^2 + (y + 6)^2 = 36 \\ y + 3 = x \end{cases}$$



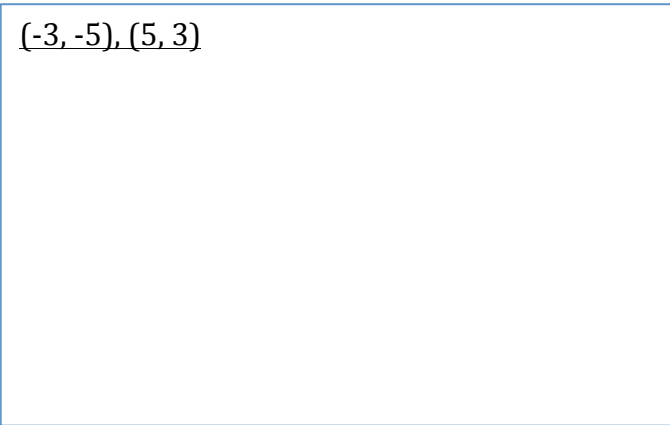
Point(s) of Intersection: (-3, -6) and (3, 0)



Find the common points by solving algebraically. Show all your work.

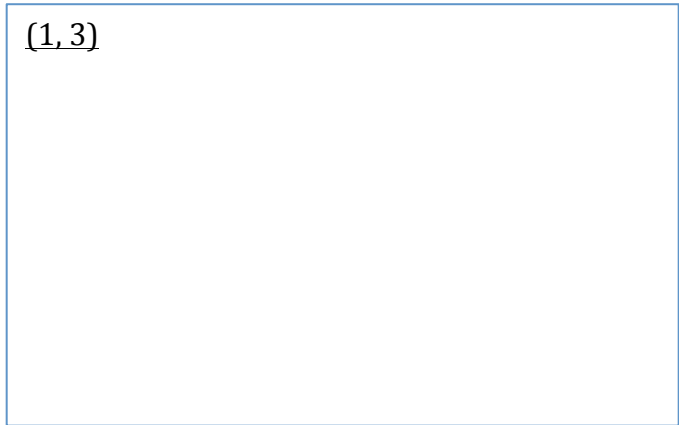
$$5. \begin{cases} x^2 + y^2 = 34 \\ x - y = 2 \end{cases}$$

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



$$6. \begin{cases} x^2 + y^2 = 10 \\ x + 3y = 10 \end{cases}$$

(1, 3)



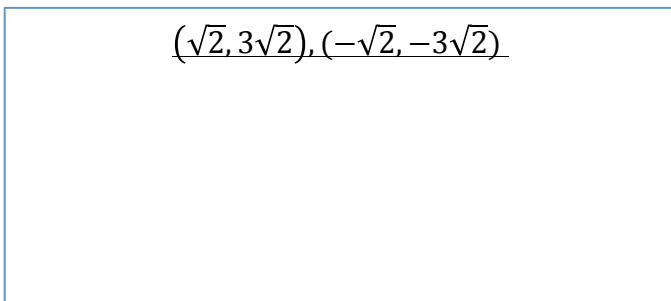
A circle is centered at the origin and has a radius of $2\sqrt{5}$ units. A line with a slope of 3 passes through the origin and intersects the circle in two places. Where does the line intersect the circle?

7. Write the equation of the circle: $x^2 + y^2 = 20$

8. Write the equation of the line: $y = 3x$

9. Find points of intersections algebraically:

$(\sqrt{2}, 3\sqrt{2}), (-\sqrt{2}, -3\sqrt{2})$



10. Find common points graphically:

