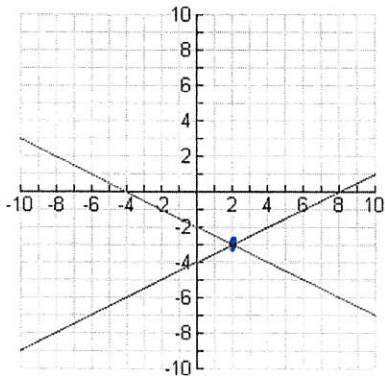
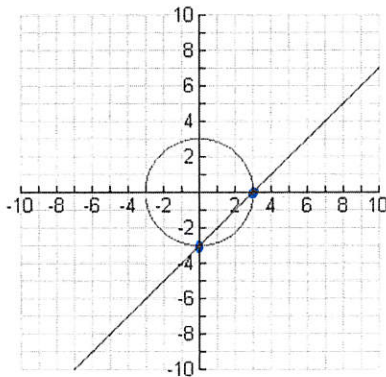


Use the graphs to find the solution(s) to each system.

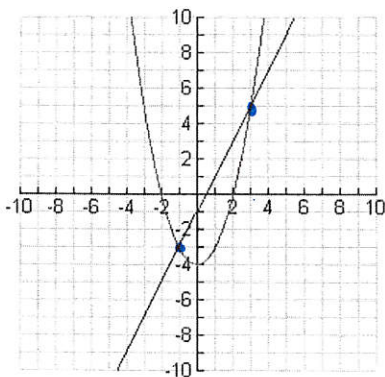
1. $x - 2y = 8$
 $y = \frac{x+4}{-2}$ (2, -3)



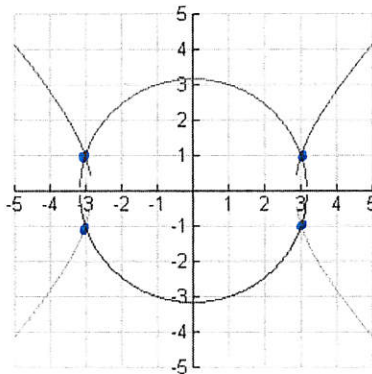
2. $x - y = 3$
 $x^2 + y^2 = 9$ (0, -3) (3, 0)



3. $y = 2x - 1$
 $y = x^2 - 4$ (3, 5) (-1, -3)



4. $x^2 + y^2 = 10$
 $y^2 - x^2 = 8$ (-3, 1) (-3, -1) (3, 1) (3, -1)



Find the exact solution(s) of each system of equations.

5. $x + 2y = 4 - x$
 $2x - 3y = 1$

$$2y = -x + 4$$

$$y = -\frac{1}{2}x + 2$$

(2, 1)

$$-2x \quad -2y$$

$$-3y = 1 - 2x$$

$$y = -\frac{1}{3} + \frac{2}{3}x$$

$$-\frac{1}{3} + \frac{2}{3}x = -\frac{1}{2}x + 2$$

$$+\frac{1}{3} + \frac{1}{2}x \quad +\frac{1}{2}x \quad +\frac{1}{3}$$

$$\frac{7}{6}x = \frac{7}{3}$$

$$x = \frac{6}{3} = 2$$

$$2 + 2y = 4$$

$$-2 \quad -2$$

$$2y = \frac{2}{2}$$

$$y = 1$$

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

(0, -2)
(1, -1)

$$x - 2 = x^2 - 2$$

$$x^2 - x = 0$$

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

$$x = 0 \quad x - 1 = 0$$

$$\quad \quad \quad +1 \quad +1$$

$$\quad \quad \quad x = 1$$

$$x = 0 \neq 1$$

Find the exact solution(s) of each system of equations.

7. $y = x + 3$
 $y = 2x^2$

~~$x = 2$~~

$x + 3 = 2x^2$

$(-1, 2)$
 $(\frac{3}{2}, \frac{9}{2})$

$2x^2 - x - 3 = 0$

$2x^2 - 3x + 2x - 3 = 0$

$x(2x - 3) + 1(2x - 3) = 0$

$x + 1 = 0$ $2x - 3 = 0$
 $x = -1$ $y = x$ $x = \frac{3}{2}$

9. $x^2 + y^2 = 4$

$x^2 + x^2 = 4$

$2x^2 = 4$

$x^2 = 2$

$x = \pm\sqrt{2}$

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

11. $y = -2x + 2$
 $y^2 = \sqrt{2x}$ $y = \sqrt{2x}$

$(\frac{1}{2}, 1), (2, -2)$

$(-2x + 2)^2 = (\sqrt{2x})^2$

$(-2x + 2)(-2x + 2) = 2x$

$-4x^2 - 8x + 4 = 2x$

$4x^2 - 10x + 4 = 0$

$2x - 5x + 2 = 0$

$\frac{5 \pm \sqrt{25 - 4(2)(2)}}{2(2)}$

$\frac{5 \pm \sqrt{9}}{4}$

$= \frac{5 \pm 3}{4} = \frac{8}{4} = 2$ $\frac{2}{4} = \frac{1}{2}$

13. $y = 2 - x$

$y = x^2 - 4x + 2$

$(0, 2)$
 $(3, -1)$

~~$x = 2$~~ $x^2 - 4x + 2 = 2 - x$

$x^2 - 3x = 0$

$x(x - 3) = 0$

$x = 0$ $x - 3 = 0$

$x = 3$

8. $y = 3x$

$\sqrt{x} = \sqrt{y^2}$

$y = \sqrt{x}$

$(3x)^2 = (\sqrt{x})^2$

$9x^2 = x$

$9x^2 - x = 0$

$x(9x - 1) = 0$

$(0, 0)$
 $(\frac{1}{9}, \frac{1}{3})$

$x = 0$ $9x - 1 = 0$
 $+1$ $+1$

$\frac{9x}{9} = \frac{1}{9}$

$x = \frac{1}{9}$

10. $x = -5$

$x^2 + y^2 = 25$

$(-5)^2 + y^2 = 25$

$\frac{25}{-25} + y^2 = \frac{25}{-25}$

$y^2 = 0$

$y = 0$

$(-5, 0)$

12. $x - y + 1 = 0$
 $y^2 = 4x$

$x + 1 = y$ $y^2 = x^2 + 2x + 1$

$4x = x^2 + 2x + 1$

$0 = x^2 - 2x + 1$

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

$x = 1$

$y = 1 + 1 = 2$

$(1, 2)$