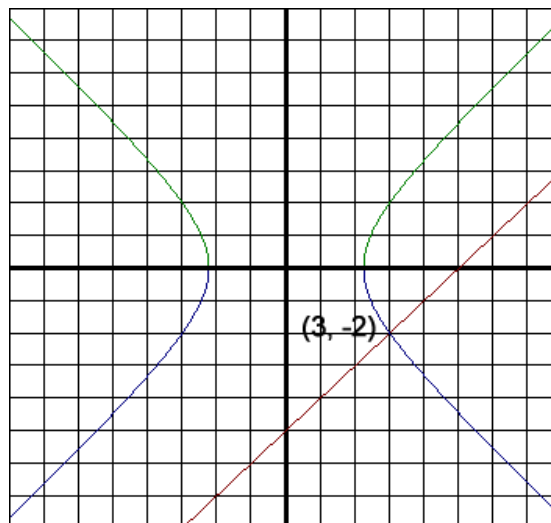


# 11.6 Systems of Nonlinear Equations

## Nonlinear Systems of Equations

EXAMPLE: Solve the system:

$$\begin{aligned}y &= x - 5 \\x^2 - y^2 &= 5\end{aligned}$$


EXAMPLE: Solve the system:

$$xy = -2$$

$$x + 2y = 0$$

EXAMPLE: Solve the system:

$$x^2 - y^2 = 0$$

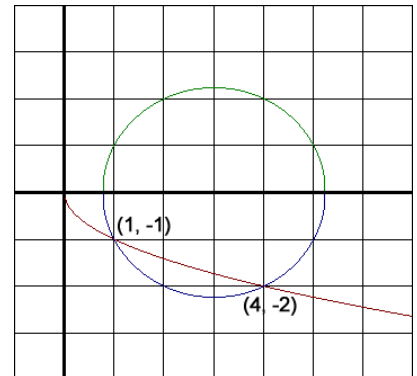
$$2x^2 + 3y^2 = 5$$

EXAMPLE: Solve the system:

$$x^2 + y^2 = 10$$

$$2x^2 - y = -1$$

EXAMPLE: Solve the system:

$$y = -\sqrt{x}$$
$$(x-3)^2 + y^2 = 5$$


EXAMPLE: Solve the system: 
$$\begin{aligned} \frac{5}{x^2} - \frac{2}{y^2} &= -3 \\ \frac{3}{x^2} + \frac{1}{y^2} &= 7 \end{aligned} .$$
 Hint: Let  $u = \frac{1}{x^2}$  and  $v = \frac{1}{y^2}$