

# Nonlinear Systems of Equations

Identify the solutions to the system of equations and then verify the solutions algebraically.

$$(x + 5)^2 + (y - 2)^2 = 9$$

$$(x - 3)^2 + (y - 2)^2 = 25$$

Identify the solutions to the system of equations and then verify the solutions algebraically.

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

$$y + 4 = (x - 1)^2$$

Solve the system of equations:

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

$$y = -x^2$$

Solve the system of equations:

$$2x^2 + y^2 = 11$$

$$2(x + 2)^2 + y^2 = 27$$

James takes 20 minutes longer than Sue to make the 240-mile drive between two cities. Sue drives three mph faster. How fast do James and Sue drive?