**9-7 Skills Practice**

***Solving Linear-Nonlinear Systems***

**Solve each system of equations algebraically.**

 **1.** *y* = *x* – 2 **2.** *y* = 3*x*

 *y* = $x^{2}$ – 2 *x* = $y^{2}$

 **3.** *y* = *x* **4.** *y* = 7

$x^{2}$ + $y^{2}$ = 4 $x^{2}$ + $y^{2}$ = 9

 **5.** *y* = –2*x* + 2 **6.** *y* = 2 – *x*

$y^{2}$ = 2*x y* = $x^{2}$ – 4*x* + 2

**7.** *y* = *x* – 1 8**.** *y* = $x^{2}$ + 1

 *y* = $x^{2}$ *y* = –$x^{2}$ + 3

**9.** *y* = 4*x*  **10.** 4$x^{2}$ + 9$y^{2}$ = 36

 4$x^{2}$ + $y^{2}$ = 20 $x^{2}$ – 9$y^{2}$ = 9

**11.** 3$(y + 2)^{2}$ – 4$(x-3)^{2}$ = 12 12**.** $y^{2}$ – 4$x^{2}$ = 4

 *y* = –2*x* + 2 *y* = 2*x*

**9-7 Skills Practice**

***Solving Linear-Nonlinear Systems***

**Solve each system of inequalities by graphing.**

**1.** *y* ≤ 3*x* – 2 **2.** *y* ≤ *x* **3.** 4$y^{2}$ + 9$x^{2}$ < 144

$x^{2}$ + $y^{2}$ < 16 *y* ≥ –2$x^{2}$ + 4 $x^{2}$ + 8$y^{2}$ < 16



**4.** *y* ≥ $x^{2}$ **5.** $x^{2}$ + $y^{2}$ < 36 **6.** $\frac{(y - 3)^{2}}{16}$ + $\frac{(x + 2)^{2}}{4}$ ≤ 1

 *y* > –*x* + 2 $x^{2}$ + $y^{2}$ ≥ 16 $(x+2)^{2}$ + $(y-3)^{2}$ ≤ 4



**7. GARDENING** An elliptical garden bed has a path from point *A* to point *B*. If the

 bed can be modeled by the equation $x^{2}$ + 3$y^{2}$ = 12 and the path can be modeled by

 the line *y* = – $\frac{1}{3}$*x*, what are the coordinates of points *A* and *B*?