In Problems 1 – 7, solve each system of equations.

1. \[
\begin{align*}
2x - y &= 4 \\
2x + y &= 4
\end{align*}
\]

2. \[
\begin{align*}
x + 2y &= 8 \\
3x + 6y &= 24
\end{align*}
\]

3. \[
\begin{align*}
-2x + y &= 4 \\
4x - 2y &= 4
\end{align*}
\]

4. \[
\begin{align*}
3x - 3y &= -15 \\
2x - 2y &= -10
\end{align*}
\]

5. \[
\begin{align*}
\frac{5}{3} x + \frac{y}{2} &= 14 \\
\frac{2}{3} x - \frac{y}{8} &= 3
\end{align*}
\]

6. \[
\begin{align*}
y &= x^2 \\
3x - y + 4 &= 0
\end{align*}
\]

7. \[
\begin{align*}
x - 3y &= -4 \\
2x^2 + 3x - 3y &= 8
\end{align*}
\]

8. Two gold bars together weigh a total of 485 pounds. One bar weighs 15 pounds more than the other.
   a. Write a system of equations that describes these relationships.
   b. How much does each bar weigh?
9. Graph the inequality \(3x + y < 6\).

10. Graph the solution set of the system of inequalities:

\[
\begin{align*}
y - x^2 & \geq 3 \\
y - x & < 0
\end{align*}
\]