We now have the following system of two equations in two variables to solve:

\[ 4x - 3y = 3 \]
\[ 8x - 6y = 7 \]

However, note what happens if you multiply the first of these equations by 2 and subtract:

\[ 8x - 6y = 6 \]
\[ 8x - 6y = 7 \]
\[ 0 = -1 \]

This conclusion, which is false, indicate that the original system of equations is inconsistent and has no solution. Geometrically, in this example, two of the three planes represented by the given equations are parallel.

\[ \square \]

**EXERCISES 2.5**

Solve each system by the substitution method.

1. \(2x + y = -10\)
   \[\begin{align*}
   6x - 3y &= 6 \\
   4x - y &= 6 \\
   2x + 3y &= 10
   \end{align*}\]

2. \(-3x + 6y = 0\)
   \[\begin{align*}
   4x + y &= 9 \\
   x + 5y &= -9 \\
   4x - 3y &= -13
   \end{align*}\]

3. \(v - w = 14\)
   \[\begin{align*}
   3v + w &= 2 \\
   s + 2t &= 5 \\
   -3s + 10t &= -7
   \end{align*}\]

Solve each system by the multiplication-addition or subtraction method.

7. \(-3x + y = 16\)
   \[\begin{align*}
   2x - y &= 10 \\
   2u - 6v &= -16 \\
   5u - 3v &= 8
   \end{align*}\]

8. \(2x + 4y = 24\)
   \[\begin{align*}
   -3x + 5y &= -25 \\
   4x - 5y &= 3 \\
   16x + 2y &= 3
   \end{align*}\]

9. \(3y - 9x = 30\)
   \[\begin{align*}
   8x - 4y &= 24 \\
   \frac{1}{2}x + 3y &= 6 \\
   -x - 8y &= 18
   \end{align*}\]

Solve each system.

13. \(x - 2y = 3\)
   \[\begin{align*}
   y - 3x &= -14 \\
   3x - 8y &= -16 \\
   7x + 19y &= -188 \\
   3x + t - 3 &= 0 \\
   2x - 3t &= -2 \\
   0.1x + 0.2y &= 0.7 \\
   0.01x - 0.01y &= 0.04
   \end{align*}\]

14. \(2x + y = 6\)
   \[\begin{align*}
   3x - 4y &= 12 \\
   16x - 5y &= 103 \\
   7x + 19y &= -188 \\
   \frac{1}{2}x - \frac{1}{2}y &= 2 \\
   \frac{1}{2}x + \frac{1}{2}y &= -1
   \end{align*}\]

15. \(-3x + 8y = 16\)
   \[\begin{align*}
   16x - 5y &= 103 \\
   4x = 7y - 6 \\
   9y = -12x + 12 \\
   \frac{1}{2}x + \frac{1}{2}y &= \frac{5}{3} \\
   \frac{1}{2}x + y &= 1
   \end{align*}\]

16. \(2(x + y) = 4 - 3y\)
   \[\begin{align*}
   \frac{x - 2}{5} + \frac{y + 1}{10} &= 1 \\
   \frac{x + 2}{3} - \frac{y + 3}{2} &= 4
   \end{align*}\]

Decide whether the given systems are consistent, inconsistent, or dependent.