1 – 4 Use the following: Matthew is choosing between two Internet plans for his smart phone. Plan A costs $18 per month plus $0.05 per minute. Plan B costs $28 per month for unlimited usage.

1. Write a system of equations to represent the problem situation. Define your variables.

2. When is the cost of each Internet plan the same? What is this cost?

3. Determine when Plan B will be a better deal for Matthew than Plan A.

4. Under what circumstances should Matthew choose one plan over the other?

5. Use substitution to solve: \[
\begin{align*}
2x - 7y &= 12 \\
-x + 3.5y &= -6
\end{align*}
\]

6. Use substitution to solve: \[
\begin{align*}
3x - 2y &= 10 \\
-1.5x + y &= 5
\end{align*}
\]

7. Use linear combinations to solve:

\[
\begin{align*}
2x - 3y &= 23 \\
3x + 4y &= -8
\end{align*}
\]

8. Use linear combinations to solve:

\[
\begin{align*}
6x + 5y &= -13 \\
8x - 3y &= 89
\end{align*}
\]
9. Use substitution to solve: \[ \begin{align*}
  y &= 3x + 4 \\
 2x - 3y &= 9
\end{align*} \]

12. Solve: \[ \begin{align*}
  y &= \frac{4}{5}x + 2 \\
  x - 3y &= 8
\end{align*} \]

10. Use linear combinations to solve: \[ \begin{align*}
  7x + 8y &= 37 \\
  -7x + 2y &= -17
\end{align*} \]

13. Solve: \[ \begin{align*}
  -\frac{1}{3}x + y &= -\frac{17}{3} \\
  -\frac{7}{9}x + y &= -\frac{47}{9}
\end{align*} \]

11. Consider the system of linear equations: \[ \begin{align*}
  \frac{1}{2}x + \frac{1}{8}y &= 4 \\
  3x + 2y &= 44
\end{align*} \]
   a. Explain how to rewrite the first equation as an equivalent equation without fractions.

   b. Rewrite the first equation as an equivalent equation without fractions.

   c. Solve.

14. Solve: \[ \begin{align*}
  3x &= -4y - 21 \\
  5x + 7y &= 39
\end{align*} \]

15. Solve: \[ \begin{align*}
  .6x - .5y &= .4 \\
  y &= .75x - 3.5
\end{align*} \]