In Class Activity: 1.8-2.1

1. Through a regular deduction from her paycheck, Alexis aid a total of $2867 last year for federal taxes. In filing her tax return, she should have paid $3052. How much does Alexis still owe on her federal tax return?

\[ \begin{align*}
\text{Let } x & = \text{ amount Alexis owes} \\
\text{Amount Paid} & = 2867 \\
\text{Total} & = 3052 \\
\end{align*} \]

\[ \begin{align*}
x + 2867 & = 3052 \\
-2867 & = -2867 \\
x & = 185 \\
\end{align*} \]

Alexis owes $185 to the federal government.

2. Kinko’s is putting together 5,000 brochures for a company that are due tomorrow at noon. Kelly has assigned the job to three different workers, each using a different copy machine. Justin produced 1,758 copies, Brittney produced 1,365 copies and Jacob’s has produced 1,259 copies. How many more copies are left to produce?

\[ \begin{align*}
\text{Let } x & = \text{ remaining copies} \\
\text{Justin} & = 1758 \\
\text{Brittney} & = 1365 \\
\text{Jacob} & = 1259 \\
\text{Total} & = 5000 \\
\end{align*} \]

\[ \begin{align*}
x + 1758 + 1365 + 1259 & = 5000 \\
x + 4382 & = 5000 \\
x & = 618 \\
\end{align*} \]

618 copies need to be made.

3. Aimee pays $750 in rent per month. How much rent does she pay for the entire year?

\[ \begin{align*}
\text{Let } x & = \text{ yearly rent} \\
\# \text{ of parts} & = 12 \\
\text{monthly rent} & = 750 \\
\end{align*} \]

\[ \begin{align*}
x & = 12 \times 750 \\
x & = 9000 \\
\end{align*} \]

Aimee paid $9000 in rent in 1 year.

4. Daroll and Dee are going to drive across country from San Diego to Philadelphia, a total of 2,778 miles. They plan on doing this in 6 days. On average, how many miles must they travel in each day?

\[ \begin{align*}
\text{Let } x & = \text{ daily miles driven} \\
\# \text{ of parts} & = 6 \\
\text{Total Miles} & = 2778 \\
\end{align*} \]

\[ \begin{align*}
6x & = 2778 \\
x & = 463 \\
\text{They must travel 463 miles each day} \\
\end{align*} \]

5. A hotel pool is in the shape of a rectangle. The rectangle is 15 yards wide and has an area of 540 square yards. What is the length of the pool?

\[ \begin{align*}
\text{Let } x & = \text{ length} \\
A & = L \cdot W \\
540 \text{ sq yd} & = \text{ x} \\
15 \text{ yd} & = x \\
15x & = 540 \\
x & = 36 \\
\text{The length of the pool is 36 yards.} \\
\end{align*} \]