1. John invested part of his $3,800 advance at 2% annual simple interest and the rest at 3% annual simple interest. If his total yearly interest from both accounts was $95, find the amount invested at each rate.

Solution

Let \( x \) be the amount invested at 2% and \( y \) the amount invested at 3%. Then \( y = 3800 - x \). Therefore

\[
\frac{2}{100}x + \frac{3}{100}y = 95
\]

\[
\frac{2}{100}x + \frac{3}{100}(3800 - x) = 95
\]

\[
x + 3(3800 - x) = 9500
\]

\[
2x + 11400 - 3x = 9500
\]

\[
x = -1900
\]

\[
x = 1900
\]

\[
y = 3800 - 1900 = 1900
\]

So the amount invested at 2% was $1900 and the amount invested at 3% was also $1900.