Commissions are paid on items sold or for work done. If items are sold the seller keeps part of the sales price. For example, if the commission rate is 3%, of the 100% sales price, the salesperson keeps 3% of the sales price and the company keeps 97% of the sales price.

Commission problems can be independent or part of other problems. As an introduction, there will be 3 independent problems.

The formula for all commission problems is:

\[ \text{Sales} \times \text{Rate} = \text{Earnings} \] (pay)

Ex. 1 At a commission rate of 17%, how much pay is earned on sales of $720?

\[ \text{Sales} \times \text{Rate} = \text{Earnings} \]

\[ 720 \times .17 = x \]
\[ 122.40 = x \]

Let \( x = \text{earnings} \). Substitute values. Change 17% into the decimal .17

Ex. 2 If a commission rate is 8%, and $73.68 was earned on a sale, how much was the sale?

\[ \text{Sales} \times \text{Rate} = \text{Earnings} \]

\[ y \times .08 = 73.68 \]
\[ .08y = 73.68 \]
\[ \frac{.08y}{.08} = \frac{73.68}{.08} \]
\[ y = 921 \]

Ex. 3 If a sale of $455 results in a commission of $13.65, what is the commission rate?

\[ \text{Sales} \times \text{Rate} = \text{Earnings} \]

\[ 455 \times r = 13.65 \]
\[ 455r = 13.65 \]
\[ \frac{455r}{455} = \frac{13.65}{455} \]
\[ r = .03 \]
\[ \text{Rate} 3\% \]

If the commission is part of another problem, only the sales would be used in the formula.