

Notes:

- No matter which version of the formula you choose to use, be sure to give your answer as a PERCENT.
- The units have been suppressed (left out) in the calculations above. This is common practice when it is *known* that units will cancel, since it makes things look simpler.

Here is the same result, with the units in place:

$$\% \text{ increase} = \frac{\$7 - \$5}{\$5} = \frac{\$2}{\$5} = \overset{\text{units have cancelled}}{\frac{2}{5}} = 0.40 = 40\%$$

In a correct use of the formulas for percent increase and decrease, the units of the numerator and denominator will always be the same, so the units will always cancel.

Question: A quantity decreased from 90 to 75. What percent decrease is this?

Solution: Which is the **original** quantity? Answer: 90

This will be the denominator.

$$\% \text{ decrease} = \frac{(90 - 75)}{90} = \frac{15}{90} \approx 0.1667 = 16.67\%$$

Note: In the exercises below, if an answer does not come out exact, then it is rounded to two decimal places.

Question: An item went on sale for \$13 from \$16. What percent decrease is this?

Solution: Which is the **original** price? Answer: \$16

This will be the denominator.

$$\% \text{ decrease} = \frac{(16 - 13)}{16} = 0.1875 = 18.75\%$$