Calculating a percentage of another number

In order to perform a calculation of the form 'what is s% of t?', we use the following method:

1. Divide the percentage, s% by 100.
2. Multiply this by t. (s ÷ 100) × t is the answer.

Increasing and decreasing by a percentage

Decreasing

For a question such as 'what is s decreased by t%?' we would use the following method:

1. Divide t by 100.
2. Multiply this by s, to get (t ÷ 100) x s = r.
3. Calculate s – r. This is the answer to the question.

Increasing

For a question such as 'what is s increased by t%?' we would use the following method:

1. Divide t by 100.
2. Multiply this by s, to get (t ÷ 100) x s = r.
3. Calculate s + r. This is the answer to the question.

Reversing a decrease

We would answer a question such as 'A value was decreased by s%, and the value is now t. What was the original value?' using the following method:

1. Calculate 100 – s. This is the percentage of the original value that the new value is.
2. Calculate t ÷ (100 – s) = r.
3. Multiply r by 100. This is the original value.

Reversing an increase

For a question such as 'a value was increased by s% and is now t. What was the original value?' we would use the following method:

1. Calculate 100 + s. This is the percentage of the original value that the new value is.
2. Calculate t ÷ (100 + s) = r.
3. Multiply r by 100. This is the original value.

Percentage change

For a question such as 's has now increased/decreased to t. What is the percentage change?' we would use the following method:

1. Calculate t – s. This is the difference between the new value and the original value.
2. Calculate (t – s) ÷ s = r.
3. Calculate r x 100. This is the percentage change.

One value as a percentage of another

For a question such as 'express s as a percentage of t', we would use the following method:

1. Calculate (s ÷ t) × 100. This is the answer.

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