# Percentage Summary
## - the fraction approach

**Here are 5 main types of questions you may be asked.**

**1.    Find a percentage of another number.**

e.g.        Find 15% of 300

$$\frac{15}{100} \times \frac{300}{1} = \frac{15}{1} \times \frac{3}{1} = 45$$

**2.    Increase (or decrease) by a percentage**

e.g.        Increase my wage of $875 per week by 8%

First find 8% of $875

$$\frac{8}{100} \times \frac{875}{1} = 70$$

Now increase my wage by $70

$$875 + 70 = 945$$

My new wage is $945 per week

If you were asked to decrease the original amount, you subtract the amount you found instead of adding it.

**3.    What percentage is one quantity of another?**

e.g.        What percentage is 35 of 175?

$$\frac{35}{175} \times \frac{100}{1} = \frac{35}{7} \times \frac{4}{1} = \frac{5}{1} \times \frac{4}{1} = 20\%$$

Note:  the value after the word "of " goes on the bottom of the fraction. In this case 175 is on the bottom of the first fracton.

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### 4.    Find the percentage decrease (or increase).

e.g.    The water storage fell from 980kL to 833kL. Find the percentage decrease?

First find the amount of decrease

980 − 833 = 147 kL decrease

Now use the formula below

$$\frac{amount\ of\ decrease}{original\ amount} \times \frac{100}{1} = \%\ decrease$$

$$\frac{147}{980} \times \frac{100}{1} = 15\%$$

For an increase use the formula:

$$\frac{amount\ of\ increase}{original\ amount} \times \frac{100}{1} = \%\ increase$$

**OR** alternatively use the formula

$$\frac{new}{old} \times \frac{100}{1} = new\ \%$$

With this methd you **MUST** then calculate the % change by calculating the difference between yoru answer and the original 100%.

### 5.    Given a percentage find the whole amount.

e.g. If 17% of my savings is $ 340, how much is my total savings?

÷ 17

17%    is    $340

1%    is    $340 ÷ 17 = $20

× 100

100%    is    100 × 20 = $2000

÷ 17

× 100

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