

Can I begin to calculate fractions of amounts?

Top tips!

To find  $\frac{1}{2}$  divide by 2, to find  $\frac{1}{4}$  divide by 4, to find  $\frac{1}{5}$  divide by 5.

If the numerator (the number on top) is more than one, you must multiply your answer by that number.

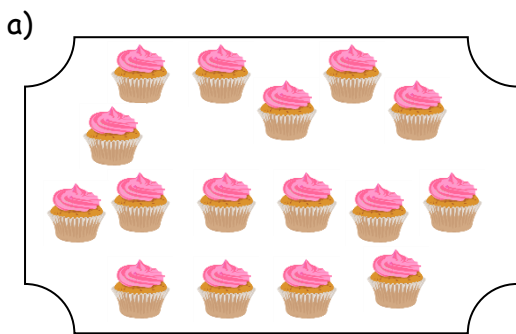
e.g.  $\frac{2}{4}$  of 16

$$16 \div 4 = 4$$

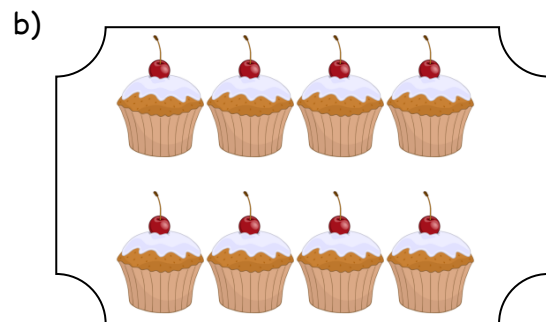
$$4 \times 2 = 8$$

$$\text{Answer} = \frac{2}{4} \text{ of } 16 = 8$$

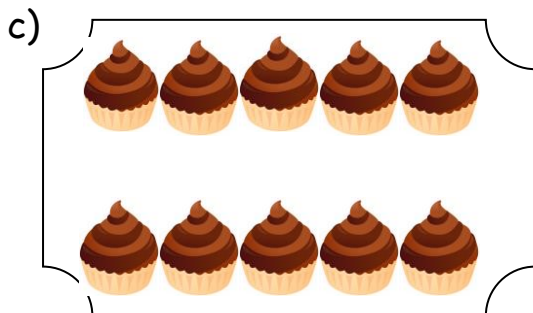
Look at these trays of cakes. Work out the given fractions of cakes. It might be a good idea to draw circles around the cakes to make them into equal groups according to the denominator (bottom number).



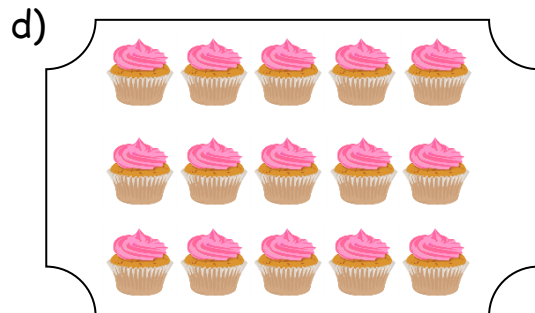
$$\frac{1}{4} \text{ of } 16 = \quad \frac{3}{4} \text{ of } 16 =$$



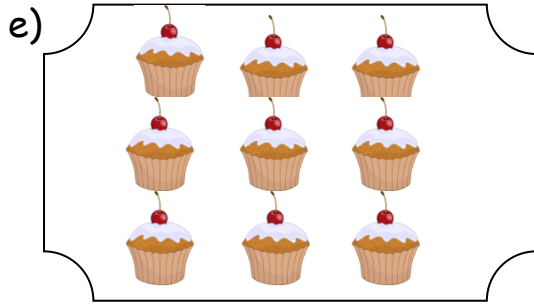
$$\frac{1}{4} \text{ of } 8 = \quad \frac{3}{4} \text{ of } 8 =$$



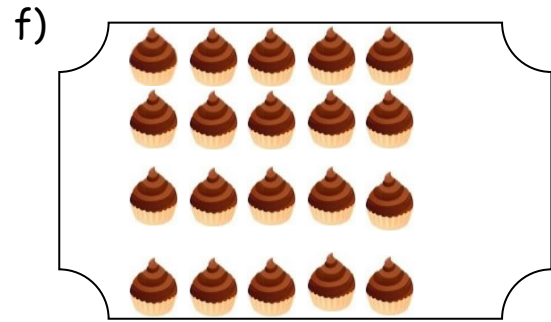
$$\frac{1}{5} \text{ of } 10 = \quad \frac{2}{5} \text{ of } 10 =$$



$$\frac{1}{5} \text{ of } 15 = \quad \frac{4}{5} \text{ of } 15 =$$



$1/3$  of 9 =       $2/3$  of 9 =



$1/5$  of 20 =       $3/5$  of 20 =

Challenge

Using the method you have just practised, complete the following...

a) Find  $2/5$  of 25

b) Find  $3/4$  of 44

c) Find  $2/4$  of 16

## Can I calculate fractions of amounts?

### Steps to Success!

Step 1 - To find a fraction of an amount, divide the amount by the denominator (the bottom number).

Step 2 - Then, multiply your answer by the numerator (the number on top).

Step 3 - There isn't one! Just write your answer and double check.

e.g.  $\frac{3}{4}$  of 16

$$16 \div 4 = 4$$

$$4 \times 3 = 12$$

$$\text{Answer} = \frac{3}{4} \text{ of } 16 = 12$$

Show your method and solve the following.

- Find  $\frac{1}{5}$  of 220.
- Calculate  $\frac{3}{10}$  of 9000.
- What is  $\frac{2}{12}$  of 144?
- Find  $\frac{6}{8}$  of 1688.
- Calculate  $\frac{7}{9}$  of 810.

### Challenge

- Sarah has  $\frac{2}{6}$  of 3000 word essay to complete.  
How many words does she have left to write?  
How many words has she already written?
- Sara says that  $\frac{2}{5}$  of 120 is 46. Is she right? Explain why.
- The school kitchen needs to buy potatoes for lunch. A large bag has 300 potatoes and a medium bag has  $\frac{3}{5}$  of a large bag. The school cook says "I need 200 potatoes so I will have to buy a large bag." Is she right? Explain your reasoning.

Can I begin to calculate percentages of amounts?

Steps to Success!

Step 1 - To find a percentage of an amount, divide the amount by 100. Use the Place Value Grid method we have taught you- this will ensure more accuracy and less confusion.

**Why?**

Percent means 'Out of 100', so by dividing the amount by 100, you are finding 1%.

Step 2 - Then, multiply your answer by the percentage that you actually need to find. Use the column method we have taught you and remember your place holders.

**Why?**

Because you've already found 1%, you only need to multiply it by the percentage you actually wanted. When you multiply a number by 1, you get the number you started with.

Step 3 - Just write your answer and double check.

e.g. 15% of 3000

$$3000 \div 100 = 30$$

$$30 \times 15 = 450$$

Answer = 450

- a) Find 10% of 700
- b) Calculate 20% of 6800
- c) What is 5% of 280?
- d) Fill in the boxes using < > or =

50% of 48		25% of 100
10% of 300		20% of 150
40% of 50		80% of 20

Challenge

- a) Calculate 35% of 200
- b) Find 45% of 600

**Can I confidently, and accurately, calculate percentages of amounts?**

- a) Find 30% of 800
- b) Calculate 5% of 2500
- c) What is 35% of 280?
- d) Would you rather 65% of £400 or 45% of £500?
- e) Suzie has completed 95% of her 4000 word essay.  
How many words has she written?  
How many words does she have left to write?

**Challenge (Show your method).**

**Hint!**

To increase, find the percentage of the amount first and add it to the original amount.

To decrease, find the percentage of the amount first and subtract it from the original amount.


a) Increase 340 by 25%

b) Decrease 300 by 45%

Can I calculate percentage increase and decrease?

- a) Increase 1000 by 20%
- b) Increase 65 by 40%
- c) Decrease 500 by 65%
- d) Decrease 3000 by 85%
- e) Increase 4500 by 3%




Challenge

<p>Australia</p>	
	
<p><u>Package Holiday</u></p> <p>Adult Price: £805 per week Child Price: 85% off adult price.</p> <p><b>Special Offer</b></p> <p>2<sup>nd</sup> Week: 65% off the price of the first week</p>	<ul style="list-style-type: none"><li>a) How much does it cost for a child to go on holiday?</li> <li>b) A family consisting of 2 adults and 3 children are interested in this package deal. How much will it cost them for a 1 week holiday?</li></ul>

**Can I solve problems using my knowledge and understanding of finding fractions and percentages of amounts?**

- a) 12 is what fraction of 360 in its simplest form?
- b) What fraction of 900 is 500 in its simplest form?
- c) 30 is what percentage of 600?
- d) The school kitchen needs to buy potatoes for lunch. A large bag has 200 potatoes and a medium bag has  $\frac{3}{5}$  of a large bag. The school cook says "I need 100 potatoes so I will have to buy a large bag." Is she right? Explain your reasoning.
- e) One packet of biscuits weighs 300g. How much does  $\frac{7}{9}$  weigh to the nearest whole?
- f) Josie buys a packet of 'mix n match' crisps containing hoops, swirls and squares. If  $\frac{2}{5}$  of the packet is hoops and 20% are squares. What percentage are swirls?  
If there are 500 crisps in a packet, how many of each type of crisp is there?

Can I further develop my problem solving skills using my knowledge and understanding of finding fractions and percentages of amounts?

<p>Tom and Sam shared equally one quarter of a chocolate bar.</p>  <p>What percentage of the chocolate bar did each child get?</p>	<p>Last month Kira saved <math>\frac{3}{5}</math> of her £10 pocket money. She also saved 15% of her £20 birthday money.</p>  <p>How much did she save altogether? <b>Explain why the pattern has formed.</b></p>
<p>Three friends competed in a 5000m race.</p> <ul style="list-style-type: none"> <li>• Billy completed half of the race.</li> <li>• Georgie completed 50% of what Billy completed</li> <li>• Charlotte completed 0.25 of what Billy completed.</li> </ul> <p>How many meters did each child run?</p>	
<p>Sam and Zach each have some money.</p> <p>Sam spends <math>\frac{1}{4}</math> of her money.</p> <p>Zach spends 90% of his money.</p> <p>They each have £60 left.</p> <p>How much more money did Zach have at the start than Sam?</p>	<p>Freya receives some pocket money.</p> <p>She spends</p> <ul style="list-style-type: none"> <li>• <math>\frac{1}{5}</math> of the money on a book.</li> <li>• <math>\frac{3}{4}</math> of what she has left on a game.</li> </ul>  <p>Freya now has £3.80 left.</p> <p>How much pocket money did she receive?</p>
<p>25% of <b>P</b> = <b>Q</b></p> <p><math>\frac{1}{5}</math> of <b>Q</b> = <b>R</b></p> <p>10% of <b>R</b> = 7</p> <p>Calculate <b>P</b> + <b>R</b></p>	<p>Work out the missing numbers.</p> <p>50% of <input style="width: 50px; height: 20px;" type="text"/> = 30</p> <p>25% of <input style="width: 50px; height: 20px;" type="text"/> = 30</p> <p><math>\frac{2}{3}</math> of <input style="width: 50px; height: 20px;" type="text"/> = 30</p>