

Converting between fractions, decimals and percentages.

1. Without a calculator:

Make the denominator 10, 100, 1000....

$$\frac{2}{5} = \frac{4}{10} = 0.4 = \frac{40}{100} = 40\%$$

2. With a calculator:

$$\frac{3}{8} = 3 \div 8 = 0.375 = 37.5\%$$

Examples:

Without a calculator find the fraction, decimal and percentage equivalents.

$$1) \frac{4}{5} = \frac{8}{10} = 0.8 = 80\%$$

$$2) 60\% = 0.6 = \frac{6}{10} = \frac{3}{5}$$

$$3) 6\% = 0.06 = \frac{6}{100} = \frac{3}{50}$$

With:

$$a) \frac{2}{7} = 0.2857 \dots = 28.57\% \approx 28.6\%$$

$$b) \frac{9}{11} = 81.81\% = 0.81$$

$$c) \frac{16}{49} = 0.327 \dots = 32.7\%$$

Without:

$$a) \frac{3}{5} = \frac{6}{10} = \frac{3}{5} = 60\%$$

$$b) 0.2 = \frac{1}{5} = 20\%$$

$$c) 0.275 = \frac{275}{1000} = \frac{275 \div 25}{1000 \div 25} = \frac{11}{40} = 27.5\%$$

$$d) \frac{7}{20} = \frac{35}{100} = 35\%$$

Write these percentages as fractions:

59%

91.7%

8.3%

$$0.083 = \frac{83}{1000}$$

60%

$$\frac{70}{100} = \frac{7}{10} = 70\%$$

$$7\% = \frac{7}{100}$$

$$20\% = \frac{1}{5}$$

Finding a percentage of an amount.

without a calculator!

30 ← 75% 30% = 12 10% = 4 99% = 39.6

0.4 ← 1% **40** 15% = $\frac{4}{2}{6}$

25% ↓ 16 4% 1.6 2.5% ↓ 1

45 ← 75% 18 ← 6 30% 10%

0.6 1% **60** 99% = 59.4

15 ← 25% 4% 2.4 2.5% 1.5 15% 9

£ 8.20

Finding a percentage of an amount using a calculator.

Find 17% of 65 $\frac{17}{100} \times 65 = 11.05$
 0.17

Find 43% of 16 = $\frac{43}{100} \times 16 = 6.88$
 0.43

Page 111 E1-6

Increase/decrease by a percentage

Increase £62 by 10%

<p>method 1 Find 10% of 62 Add on 10% of 68.20</p>	<p>method 2 $\frac{110}{100} \times 62 = £68.20$ $1.1 \times 62 = £68.20$</p>
--	---

Increase £62 by 14%

<p>method 1 $0.14 \times 62 = 8.68$ $62 + 8.68 = £70.68$</p>	<p>method 2 $1.14 \times 62 = £70.68$ $\frac{114}{100}$</p>
--	---

Decrease £62 by 10%

<p>method 1 Find 10% of 62 Subtract of £6.20 from £62 £55.80</p>	<p>method 2 $\frac{90}{100} \times 62 = £55.80$ $0.9 \times 62 = £55.80$</p>
---	--

Decrease £62 by 17%

<p>method 1 $17\% \text{ of } 62 = 10.54$ $62 - 10.54 = £51.46$</p>	<p>method 2 $0.83 \text{ of } 62 = £51.46$ $\frac{83}{100}$</p>
---	---

page 383 odds only,
 page 384/385 odds only

Here's a recipe for muesli squares.

MUESLI SQUARES

Makes 15

75 g butter
30 g golden syrup
45 g soft brown sugar
165 g muesli
45 g glacé cherries
105 g plain chocolate, melted

Writing a fraction
as a percentage

465g Total

What percentage of the bake is:

a) butter $\frac{75}{465} \times 100 = 16\frac{2}{3}\%$

b) golden syrup $\frac{30}{465} \times 100 = 6\frac{2}{3}\%$

c) sugar 10%

d) muesli $\frac{165}{465} \times 100 = 35\frac{2}{3}\%$

e) cherries $\frac{45}{465} \times 100 = 10\%$

page 109, 110, 113

Finding a percentage increase.

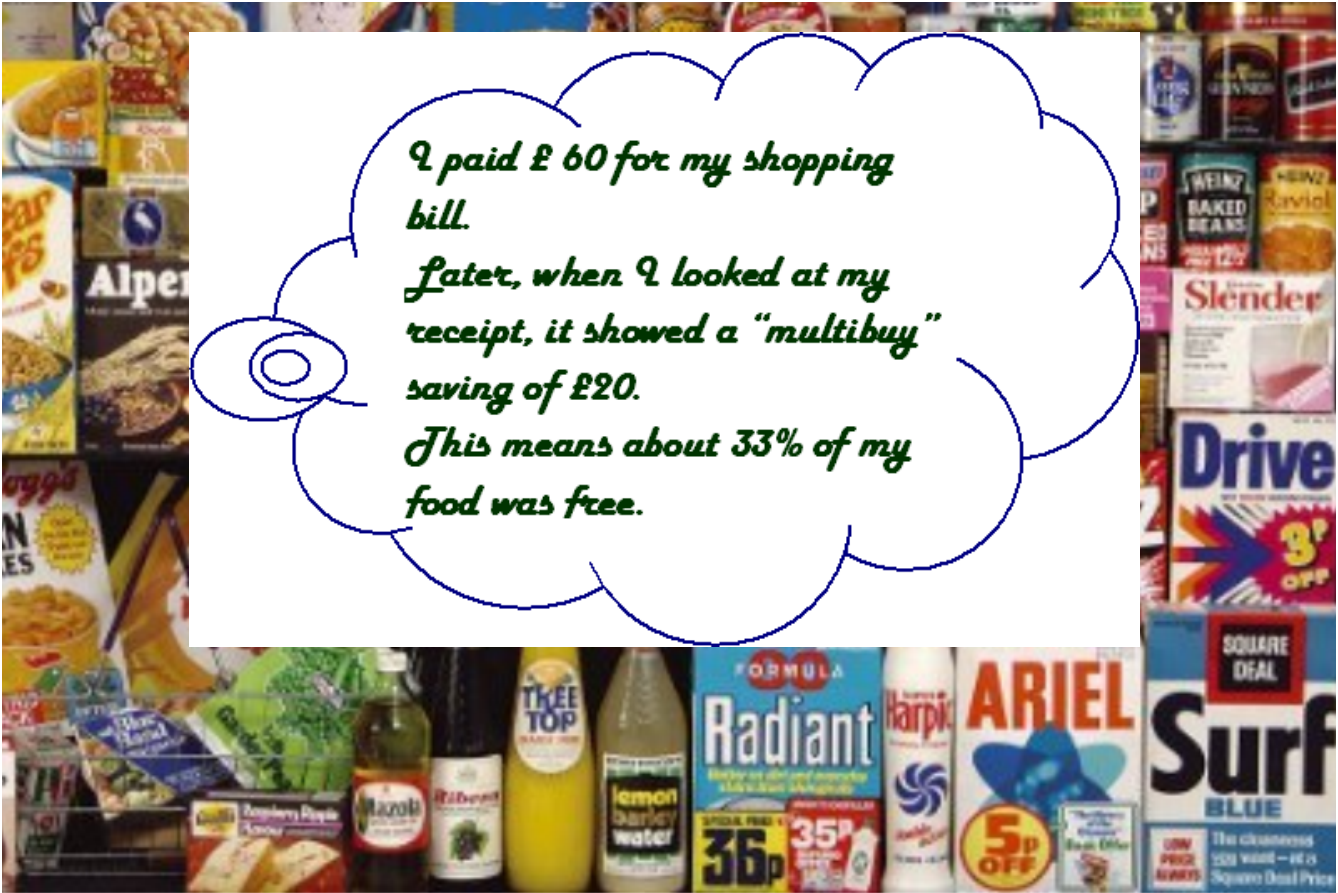


In the past 5 years Mabel's weight has increased. She used to weigh 25kg. Now she weighs 30kg. What is the percentage increase?

$$\begin{array}{l} \text{Actual} \rightarrow \\ \text{original} \rightarrow \end{array} \frac{5}{25} \times 100 \leftarrow \text{perc}$$

By what percentage is Dom taller than Trinity
Dom 187cm Trinity 159cm

$$\begin{array}{l} \text{Actual increase} = 28\text{cm} \\ \frac{28}{159} \times 100 = 18\% \end{array}$$



Finding a percentage decrease.



Was £5.00

now £3.50

$$\frac{1.50}{5.00} \times 100$$

What is the percentage saving?



Suppose a miracle happened and Mabel lost that extra 5kg and returned to her slim 25kg. What would be the percentage decrease in her weight?

$$\frac{5}{30} \times 100 = 16.7\%$$

Percentage decrease = $\frac{\text{Actual decrease}}{\text{original}} \times 100$

page 388 odds only

p388

THE SALES



I got a great bargain in the sales. This bag was £15.00 last week. Today it was reduced to £5.00.

$$66.\overline{6}\%$$

$$\frac{10}{15} = \frac{2}{3}$$

$$\frac{20}{50} \times 100 = 40\%$$

Well, what do you think of this...I spent £30.00 on these trousers and they were priced at £50.00. That's an even better bargain.

I calculated my interest on savings to be

$$150 \times 1.06 \times 1.06 \times 1.06 \approx 178.65$$

$$150 \times 1.06^3$$

$$x^{\square}$$

$$\frac{\wedge}{xy}$$



You want to buy a car.

It costs £4000.

You can buy now and borrow at 20% per year,

or,

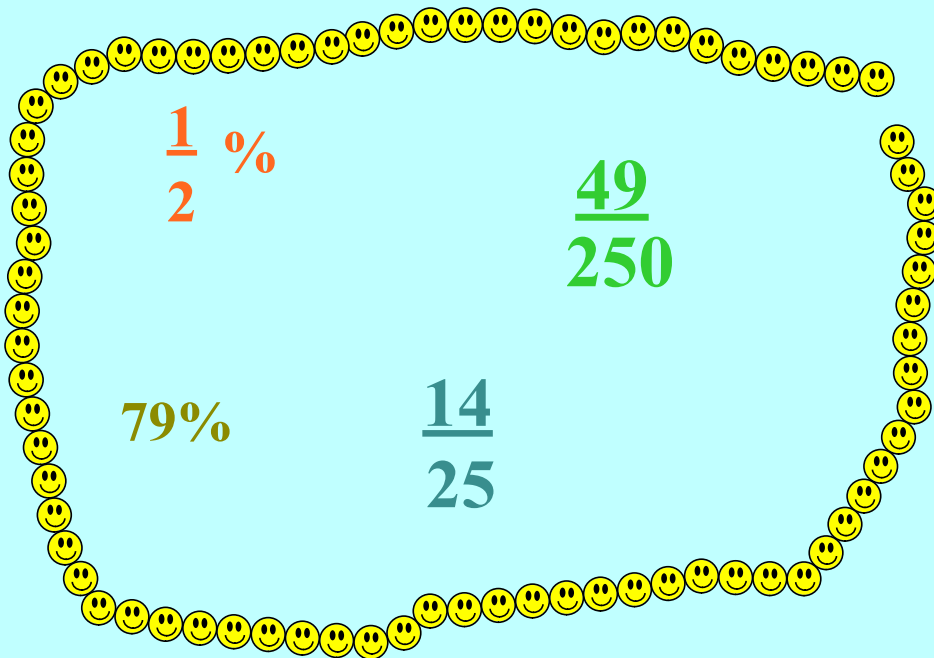
you can save earning 6% per year.

You have £150 to put aside per month for the car.

Work out how long you will spend buying the car.

Borrow	plus interest	payback	Balance
4000	$4000 \times 1.2 = 4800$	- £1800	£3000
3000	$3000 \times 1.2 = 3600$	- £1800	£1800
1800	2160	- £1800	£360
360	432	- £432	
save	Interest		+ £1800
£1800	$1800 \times 1.06 = 1908.00$		3708.00
£3708	$3708 \times 1.06 = 3930.48$		

Without a calculator convert each of these to a decimal:



$\frac{1}{2} \%$

$\frac{49}{250}$

79%

$\frac{14}{25}$



Food has gone up in price recently.
A family shop costs about £100.
If food prices have gone up by about 15% in the last year, how much would you have paid for a shop this time last year.

$$\begin{array}{l} 115\% \text{ is } \pounds 100 \\ 1\% \text{ is } \frac{100}{115} = 0.869 \\ 100\% \text{ is } \pounds 86.96 \end{array}$$

Attachments

PERCEN~1.PPT

percentages in pieces.ppt