



Ratio and Percentage

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1) November 2013 V1

- 1 Work out 72 cents as a percentage of 83 cents.

Answer % [1]

2) November 2013 V1

- 4 Calculate 17.5% of 44kg.

Answer kg [2]

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3) June 2011 V1

- 1 A concert hall has 1540 seats.

Calculate the number of people in the hall when 55% of the seats are occupied.

Answer [1]

4) June 2016 V1

- 2 From a sample of 80 batteries, 3 are faulty.

Work out the percentage of faulty batteries.

..... % [1]

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- 10 Maria decides to increase her homework time of 8 hours per week by 15%.

Calculate her new homework time.

Give your answer in hours and minutes.

Answer h min [3]



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6) November 2012 V3

- 5 Maria pays \$84 rent.
The rent is increased by 5%.

Calculate Maria's new rent.

Answer \$ [2]

7) June 2015 V3

- 10 In a sale, the cost of a coat is reduced from \$85 to \$67.50 .

Calculate the percentage reduction in the cost of the coat.

Answer % [3]

8) June 2014 V2

- 9 At the beginning of July, Kim had a mass of 63 kg.
At the end of July, his mass was 61 kg.

Calculate the percentage loss in Kim's mass.

Answer % [3]

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- 11 Ahmed paid \$34 000 for a car.
His car decreased in value by 40% at the end of the first year.
The value at the end of the second year was 10% less than the value at the end of the first year.

Calculate the value of Ahmed's car after 2 years.

\$ [2]



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- 5 Amalie makes a profit of 20% when she sells a shirt for \$21.60.

Calculate how much Amalie paid for the shirt.

Answer \$ [2]



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11) November 2012 V2

- 5** The Tiger Sky Tower in Singapore has a viewing capsule which holds 72 people. This number is 75% of the population of Singapore when it was founded in 1819. What was the population of Singapore in 1819?

Answer [2]

12) November 2013 V3

- 6** In 2012 the cost of a ticket to an arts festival was \$30. This was 20% more than the ticket cost in 2011.

Calculate the cost of the ticket in 2011.

Answer \$ [3]

13) June 2014 V2

- 11** Anita buys a computer for \$391 in a sale. The sale price is 15% less than the original price.

Calculate the original price of the computer.

Answer \$ [3]

14) November 2015 V2

- 14** Jasjeet and her brother collect stamps.
When Jasjeet gives her brother 1% of her stamps, she has 2475 stamps left.
Calculate how many stamps Jasjeet had originally.

Answer [3]

14*) November 2020 V2

- 16** The selling price of a shirt is \$26.50 .
This includes a tax of 6%.
Calculate the price of the shirt before the tax was added.

\$ [2]

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15) June 2010 V1

- 2 Michel changed \$600 into pounds (£) when the exchange rate was £1 = \$2.40.
He later changed all the pounds back into dollars when the exchange rate was £1 = \$2.60.

How many dollars did he receive?

Answer \$ [2]

16) June 2010 V3

- 3 Ricardo changed \$600 into pounds (£) when the exchange rate was \$1 = £0.60.
He later changed all the pounds back into dollars when the exchange rate was \$1 = £0.72.

How many dollars did he receive?

Answer \$ [2]

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19 Reina went on holiday to New Zealand.

(a) She travelled the 65 km from Tokyo to Narita Airport by taxi.

The taxi journey cost 300 yen (¥) per kilometre plus a fixed charge of ¥700.

Calculate the cost of the taxi journey.

Answer(a) ¥ [2]

(b) At Narita Airport, Reina changed ¥71 190 into New Zealand dollars (NZ\$).

The exchange rate was NZ\$1 = ¥56.5.

How many New Zealand dollars did she receive?

Answer(b) NZ\$ [2]

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18) November 2010 V2

- 15 The air fare from Singapore to Stockholm can be paid for in Singapore dollars (S\$) or Malaysian Ringgits (RM).
One day the fare was S\$740 or RM1900 and the exchange rate was $S\$1 = RM2.448$.

How much less would it cost to pay in Singapore dollars?

Give your answer in Singapore dollars correct to the nearest Singapore dollar.

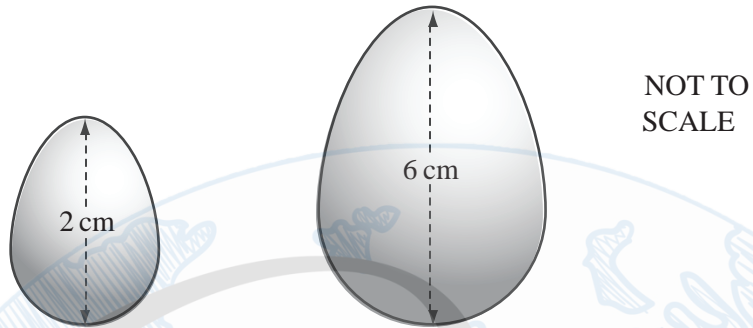
Answer S\$ [3]

19) November 2010 V3

- 7 In France, the cost of one kilogram of apricots is €3.38 .
In the UK, the cost of one kilogram of apricots is £4.39 .
 $£1 = €1.04$
Calculate the difference between these prices.
Give your answer in pounds (£).

..... [2]
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6



A company makes solid chocolate eggs and their shapes are mathematically similar. The diagram shows eggs of height 2 cm and 6 cm. The mass of the small egg is 4 g.

Calculate the mass of the large egg.

Answer g [2]

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13 The scale on a map is 1: 20 000.

- (a) Calculate the actual distance between two points which are 2.7 cm apart on the map.
Give your answer in kilometres.

Answer(a) km [2]

- (b) A field has an area of 64 400 m²
Calculate the area of the field on the map in cm².

Answer(b) cm² [2]

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22) June 2011 V2

- 5 A meal on a boat costs 6 euros (€) or 11.5 Brunei dollars (\$).

In which currency does the meal cost less, on a day when the exchange rate is $\text{€}1 = \$1.9037$?
Write down all the steps in your working.

Answer [2]

23) June 2011 V3

- 12 Federico changed 400 euros (€) into New Zealand dollars (NZ\$) at a rate of $\text{€}1 = \text{NZ\$} 2.1$.
He spent x New Zealand dollars and changed the rest back into euros at a rate of $\text{€}1 = \text{NZ\$ } d$.

Find an expression, in terms of x and d , for the number of euros Federico received.

Answer € [3]

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19 The scale of a map is 1 : 250 000.

(a) The actual distance between two cities is 80km.

Calculate this distance on the map. Give your answer in centimetres.

Answer(a) cm [2]

(b) On the map a large forest has an area of 6 cm^2 .

Calculate the actual area of the forest. Give your answer in square kilometres.

Answer(b) km^2 [2]

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- 1 Martha divides \$240 between spending and saving in the ratio

$$\text{spending} : \text{saving} = 7 : 8.$$

Calculate the amount Martha has for spending.

Answer \$ [2]



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26) November 2011 V3

- 12 Alberto changes 800 Argentine pesos (ARS) into dollars (\$) when the rate is $\$1 = 3.8235$ ARS. He spends \$150 and changes the remaining dollars back into pesos when the rate is $\$1 = 3.8025$ ARS.

Calculate the amount Alberto now has in pesos.

Answer ARS [3]

27) November 2011 V3

- 13 During a marathon race an athlete loses 2 % of his mass. At the end of the race his mass is 67.13kg.

Calculate his mass before the race.

Answer kg [3]

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28) June 2012 V1

1 The price of a ticket for a football match is \$124

(a) Calculate the amount received when 76500 tickets are sold.

Answer(a) \$ [1]

(b) Write your answer to **part (a)** in standard form.

Answer(b) \$ [1]

29) June 2012 V1

2 Gregor changes \$700 into euros (€) when the rate is €1 = \$1.4131 .

Calculate the amount he receives.

Answer € [2]

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15 The scale of a map is 1 : 500 000.

- (a) The actual distance between two towns is 172 km.
Calculate the distance, in centimetres, between the towns on the map.

Answer(a) cm [2]

- (b) The area of a lake on the map is 12cm^2
Calculate the actual area of the lake in km^2 .

Answer(b) km^2 [2]

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13 The taxi fare in a city is \$3 **and** then \$0.40 for every kilometre travelled.

(a) A taxi fare is \$9.

How far has the taxi travelled?

Answer(a) km [2]

(b) Taxi fares cost 30% more at night.

How much does a \$9 daytime journey cost at night?

Answer(b) \$ [2]

8 During her holiday, Hannah rents a bike.
She pays a fixed cost of \$8 and then a cost of \$4.50 per day.
Hannah pays with a \$50 note and receives \$10.50 change.

Calculate for how many days Hannah rents the bike.

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Answer days [3]

- 7 The train fare from Bangkok to Chiang Mai is 768 baht.
The exchange rate is £1 = 48 baht.

Calculate the train fare in pounds (£).

Answer £ [2]



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- 3 Jamie needs 300 g of flour to make 20 cakes.

How much flour does he need to make 12 cakes?

Answer g [2]



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- 3 Pedro and Eva do their homework.
Pedro takes 84 minutes to do his homework.

The ratio Pedro's time : Eva's time = 7 : 6.

Work out the number of minutes Eva takes to do her homework.

Answer min [2]



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36) June 2013 V1

- 13 Martina changed 200 Swiss francs (CHF) into euros (€).
The exchange rate was €1 = 1.14 CHF.

Calculate how much Martina received.
Give your answer correct to the nearest euro.

Answer €..... [3]

37) June 2013 V2

- 6 George and his friend Jane buy copies of the same book on the internet.
George pays \$16.95 and Jane pays £11.99 on a day when the exchange rate is \$1 = £0.626.

Calculate, in dollars, how much more Jane pays.

www.Q8M *aths*.com Answer \$ [2]

- 1 Sheila can pay her hotel bill in Euros (€) or Pounds (£).
The bill was €425 or £365 when the exchange rate was £1 = €1.14 .

In which currency was the bill cheaper?
Show all your working.

Answer [2]

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- 10 The table shows how the dollar to euro conversion rate changed during one day.

Time	1000	11 00	12 00	13 00	14 00	15 00	16 00
\$1	€1.3311	€1.3362	€1.3207	€1.3199	€1.3200	€1.3352	€1.3401

Khalil changed \$500 into euros (€).

How many more euros did Khalil receive if he changed his money at the highest rate compared to the lowest rate?

Answer €..... [3]

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- 6 Carlo changed 800 euros (€) into dollars for his holiday when the exchange rate was €1 = \$1.50 .
His holiday was then cancelled.
He changed all his dollars back into euros and he received €750.

Find the new exchange rate.

Answer €1 = \$..... [3]



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- 3 Chris changes \$1350 into euros (€) when €1 = \$1.313 .

Calculate how much he receives.

Answer €..... [2]



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- 8 On a ship, the price of a gift is 24 euros (€) or \$30.

What is the difference in the price on a day when the exchange rate is €1 = \$1.2378?

Give your answer in dollars, correct to the nearest cent.

Answer \$..... [3]

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43) November 2014 V2

- 7 For her holiday, Alyssa changed 2800 Malaysian Ringgits (MYR) to US dollars (\$) when the exchange rate was 1 MYR = \$0.325 .

At the end of her holiday she had \$210 left.

- (a) How many dollars did she spend?

Answer(a) \$..... [2]

- (b) She changed the \$210 for 750 MYR.

What was the exchange rate in dollars for 1 MYR?

Answer(b) 1 MYR = \$..... [1]

44) November 2014 V3

- 1 \$1 = 8.2 rand

Change \$350 into rands.

Answer rand [2]

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45) June 2015 V3

- 1 Ahmed and Babar share 240 g of sweets in the ratio 7:3.

Calculate the amount Ahmed receives.

Answer g [2]

46) June 2015 V3

- 7 James buys a drink for 2 euros (€).

Work out the cost of the drink in pounds (£) when £1 = €1.252 .
Give your answer correct to 2 decimal places.

Answer £ [3]

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- 4 Pip and Ali share \$785 in the ratio Pip:Ali = 4:1.

Work out Pip's share.

Answer \$ [2]



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48) November 2015 V2

- 3 Carlos changed \$950 into euros (€) when the exchange rate was $\text{€}1 = \$1.368$.

Calculate how many euros Carlos received.

Answer € [2]

49) March 2015 V2

- 9 Ahmed, Batuk and Chand share \$1000 in the ratio 8: 7: 5.

Calculate the amount each receives.

Answer Ahmed \$

Batuk \$

Chand \$ [3]

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50) June 2016 V1

- 5 Omar changes 2000 Saudi Arabian riyals (SAR) into euros (€) when the exchange rate is €1 = 5.087 SAR.

Work out how much Omar receives, giving your answer correct to the nearest euro.

€[2]

51) November 2016 V1

- 3 The price of a toy is 12 euros (€) in Germany and 14 Swiss francs in Switzerland.
1 Swiss franc = €0.905

Calculate the difference between these two prices.
Give your answer in euros.

€[2]

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12 Ralf and Susie share \$57 in the ratio 2 : 1.

(a) Calculate the amount Ralf receives.

\$ [2]

(b) Ralf gives \$2 to Susie.

Calculate the new ratio Ralf's money : Susie's money.
Give your answer in its simplest form.

..... : [2]

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