

- 1 Pavel and Katie share some sweets in the ratio 3 : 8  
Katie gets 32 sweets.

(a) How many sweets does Pavel get?

.....  
(2)

Katie also has a tin of chocolates.  
There are 80 chocolates in the tin.  
45% of the chocolates have toffee in the middle.

(b) Work out the number of chocolates that have toffee in the middle.

.....  
(2)

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**(Total for Question 1 is 4 marks)**

- 2 Sylvie shares £45 between Ann, Bob and Cath in the ratio 2 : 3 : 4

Work out the amount each person gets.

Ann .....

Bob .....

Cath .....

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**(Total for Question 2 is 3 marks)**

**3** Jim has only 5p coins and 10p coins.

The ratio of the number of 5p coins to the number of 10p coins is 2 : 3

Work out the ratio of

the total value of the 5p coins : the total value of the 10p coins.

Give your answer in its simplest form.

..... : .....

**(Total for Question 3 is 3 marks)**

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**4** Sandra has a piece of string 153 cm long.  
She cuts the string into three lengths in the ratio 4 : 2 : 3

Work out the length, in centimetres, of each piece of string.

..... cm

..... cm

..... cm

**(Total for Question 4 is 3 marks)**

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- 5 Work out the difference between the largest share and the smallest share when 3450 yen is divided in the ratios 2:6:7

..... yen

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**(Total for Question 5 is 3 marks)**

- 6 Danil, Gabriel and Hadley share some money in the ratios 3:5:9  
The difference between the amount of money that Gabriel receives and the amount of money that Hadley receives is 196 euros.

Work out the amount of money that Danil receives.

..... euros

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**(Total for Question 6 is 3 marks)**

7 Anna and Lionel share \$675 in the ratio 4 : 5

Lionel gives  $\frac{3}{5}$  of his share of the money to his mother.

How much money does Lionel give to his mother?

\$.....

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(Total for Question 7 is 3 marks)

8 3 years ago, the ratio of Tom's age to Clemmie's age was 2 : 7  
Tom is now 15 years old and Clemmie is now  $x$  years old.

Find the value of  $x$ .

$x =$  .....

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(Total for Question 8 is 3 marks)

**9** 5 schools sent some students to a conference.

One of the schools sent both boys and girls.

This school sent 16 boys.

The ratio of the number of boys it sent to the number of girls it sent was 1 : 2

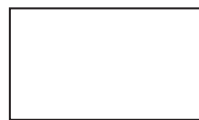
The other 4 schools sent only girls.

Each of the 5 schools sent the same number of students.

Work out the total number of students sent to the conference by these 5 schools.

.....  
**(Total for Question 9 is 4 marks)**

10 Emma has a digital photo.



540 pixels

720 pixels

Diagram **NOT**  
accurately drawn

The photo has a width of 720 pixels.

The photo has a height of 540 pixels.

- (a) Write down the ratio of the width of the photo to the height of the photo.  
Give your ratio in its simplest form.

.....  
(2)

Emma wants the ratio of the width of the photo to the height of the photo to be 3 : 2

She reduces the number of pixels in the height of the photo.

The width of the photo is still 720 pixels.

The ratio of the width of the photo to the new height of the photo is 3 : 2

- (b) Work out the new height of the photo.

..... pixels  
(2)

(Total for Question 10 is 4 marks)

- 11** Talil is going to make some concrete mix.  
He needs to mix cement, sand and gravel in the ratio 1 : 3 : 5 by weight.

Talil wants to make 180 kg of concrete mix.

Talil has

15 kg of cement  
85 kg of sand  
100 kg of gravel

Does Talil have enough cement, sand and gravel to make the concrete mix?

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**(Total for Question 11 is 4 marks)**

**12** On a farm there are chickens, ducks and pigs.

The ratio of the number of chickens to the number of ducks is  $7:2$

The ratio of the number of ducks to the number of pigs is  $5:9$

There are 36 pigs on the farm.

Work out the number of chickens on the farm.

.....  

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**(Total for Question 12 is 3 marks)**



**13** Each day a company posts some small letters and some large letters.

The company posts all the letters by first class post.

The tables show information about the cost of sending a small letter by first class post and the cost of sending a large letter by first class post.

**Small Letter**

Weight	First Class Post
0–100 g	60p

**Large Letter**

Weight	First Class Post
0–100 g	£1.00
101–250 g	£1.50
251–500 g	£1.70
501–750 g	£2.50

One day the company wants to post 200 letters.

The ratio of the number of small letters to the number of large letters is 3 : 2

70% of the large letters weigh 0–100 g.

The rest of the large letters weigh 101–250 g.

Work out the total cost of posting the 200 letters by first class post.

£.....

**(Total for Question 13 is 5 marks)**

**14** There are 60 children in a club.

In the club, the ratio of the number of girls to the number of boys is 3 : 1

$\frac{3}{5}$  of the girls play a musical instrument.

$\frac{4}{5}$  of the boys play a musical instrument.

What fraction of the 60 children play a musical instrument?

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**(Total for Question 14 is 4 marks)**

**15** 120 children go on an activity holiday.

The ratio of the number of girls to the number of boys is 3 : 5

On Sunday, all the children either go sailing or go climbing.

$\frac{16}{25}$  of the boys go climbing.

Twice as many girls go sailing as go climbing.

Work out how many children go sailing on Sunday.

.....  

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**(Total for Question 15 is 6 marks)**

- 16** Brendon, Asha and Julie share some money in the ratios 3 : 2 : 6  
The **total** amount of money that Asha and Julie receive is \$36

Work out the amount of money that Brendon receives.

\$.....

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**(Total for Question 15 is 3 marks)**

**17** Pieter owns a currency conversion shop.

Last Monday, Pieter changed a total of 20 160 rand into a number of different currencies.

He changed  $\frac{3}{10}$  of the 20 160 rand into euros.

He changed the rest of the rands into dollars, rupees and francs in the ratios 9 : 5 : 2

Pieter changed more rands into dollars than he changed into francs.

Work out how many more.

..... rand

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**(Total for Question 17 is 4 marks)**

**18** Andreas, Isla and Paulo share some money in the ratios 3 : 2 : 5

The **total** amount of money that Isla and Paulo receive is £76 more than the amount of money that Andreas receives.

Andreas buys a video game for £48.50 with some of his share of the money.

Work out how much money Andreas has left from his share of the money when he has bought the video game.

£.....

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(Total for Question 18 is 4 marks)

**19** The people working for a company work in Team A or in Team B.

number of people in Team A : number of people in Team B = 3 : 4

$\frac{4}{5}$  of Team A work full time.

24% of Team B work full time.

Work out what fraction of the people working for the company work full time.  
Give your fraction in its simplest form.

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**(Total for Question 19 is 3 marks)**

**20** Behnaz makes 300 celebration cards so that

number of birthday cards : number of anniversary cards : number of congratulations cards = 7:5:3

$\frac{2}{5}$  of the birthday cards have numbers on them.

36% of the anniversary cards have numbers on them.

None of the congratulations cards have numbers on them.

Work out what fraction of the 300 cards have numbers on them.

Give your answer in its simplest form.

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(Total for Question 20 is 5 marks)



**21** The ratio  $(y + x):(y - x)$  is equivalent to  $k:1$

Show that  $y = \frac{x(k + 1)}{k - 1}$

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**(Total for Question 21 is 3 marks)**

- 22** White shapes and black shapes are used in a game.  
Some of the shapes are circles.  
All the other shapes are squares.

The ratio of the number of white shapes to the number of black shapes is  $3:7$

The ratio of the number of white circles to the number of white squares is  $4:5$

The ratio of the number of black circles to the number of black squares is  $2:5$

Work out what fraction of all the shapes are circles.

.....  

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**(Total for Question 22 is 4 marks)**

**23** The ratio of Marta's hourly pay to Khalid's hourly pay is 6 : 5

Both Marta and Khalid get an increase of £1.50 in their hourly pay.

The ratio of Marta's hourly pay to Khalid's hourly pay after this increase is 13 : 11

Work out the hourly pay before the increase for Marta and for Khalid.

Marta £.....

Khalid £.....

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**(Total for Question 23 is 4 marks)**

**24**  $p$  and  $q$  are two numbers such that  $p > q$

When you subtract 5 from  $p$  and subtract 5 from  $q$  the answers are in the ratio 5 : 1

When you add 20 to  $p$  and add 20 to  $q$  the answers are in the ratio 5 : 2

Find the ratio  $p : q$

Give your answer in its simplest form.

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(Total for Question 24 is 5 marks)

**25**  $5c + d = c + 4d$

(a) Find the ratio  $c : d$

.....  
(2)

$6x^2 = 7xy + 20y^2$  where  $x > 0$  and  $y > 0$

(b) Find the ratio  $x : y$

.....  
(3)

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**(Total for Question 25 is 5 marks)**