

Functional
Skills
mathematics
Level 1

- 1)
 - a) Write the number forty five thousand, two hundred and seventy three in figures.
 - b) Write the number five thousand, one hundred and three in figures.
 - c) Write the number three hundred thousand, seven hundred and ninety one in figures.
 - d) Write the number two and a half million in figures.
 - e) Write the number one and three quarter million in figures.

- 2) Write the following numbers in words

- a) 1 250
- b) 3 502
- c) 72 067
- d) 192 040
- e) 30 000 000

- 3)
 - a) Write down the value of the 7 in the number 3 752.
 - b) Write down the value of the 6 in the number 56 025.
 - c) Write down the value of the 2 in the number 99 723.
 - d) Write down the value of the 5 in the number 258 610.
 - e) Write down the value of the 2 in the number 1 253 549.

- 4) What is the value of the digit 7 in 38.1472?

Choose, and circle, the correct answer from the following:

$$\frac{7}{10} \quad \frac{7}{100} \quad \frac{7}{1000} \quad \frac{7}{10000}$$

Put these numbers in order, starting with the smallest:

1) 74, 57, 38, 8, 61

2) 39, 84, 11, 128, 24

3) 76, 102, 12, 140, 73

4) 3, -2, -7, 10, -1

5) -3, -11, 1, -5, 7

6) -4, 6, 0, -6, -1

7) 205, 2005, 105, 55, 5005

8) 83, -61, -42, 65, -14

1) Put these amounts of money in order, starting with the smallest:

a) £4.50, £3.82, £4.05, £3.99, £3.54

b) £1.25, £2.41, £1.24, £2.04, £1.99

c) £15.83, £24.18, £13.99, £46.01, £46.10

2) Circle the smallest number: 0.1, 0.09, 0.99, 0.15, 0.11

3) Put these numbers in order, starting with the smallest:

2.01, 2.45, 2.14, 2.006, 2.405

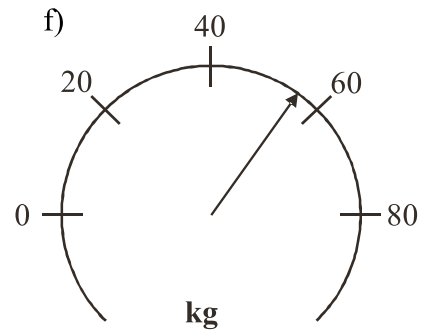
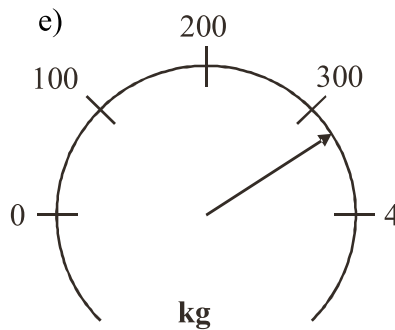
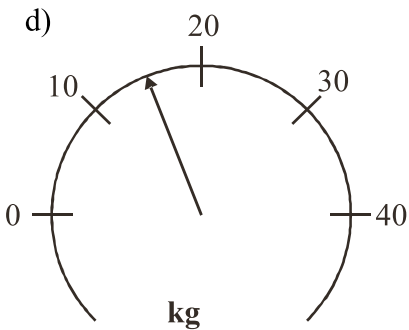
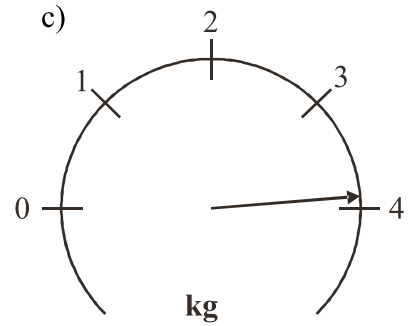
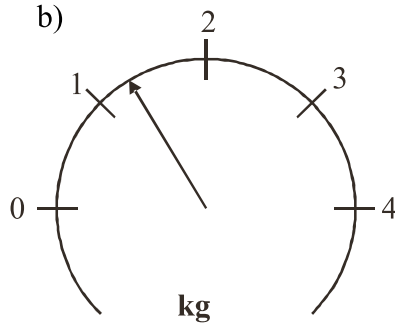
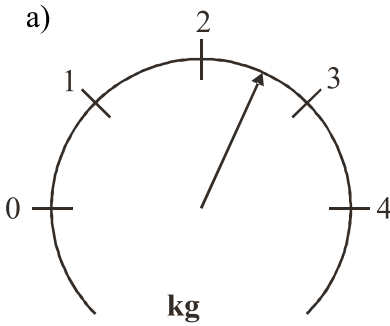
4) Put these numbers in order, starting with the smallest:

0.76, 0.668, 0.608, 0.099, 0.909

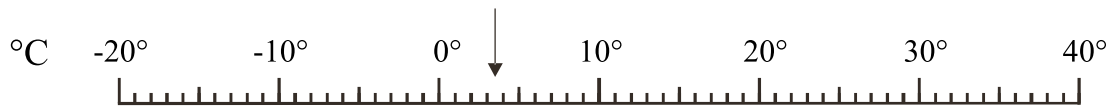
5) Put these numbers in order, starting with the smallest:

5.004, 4.889, 4.099, 5.002, 4.095

1) Estimate the reading on each of these scales:



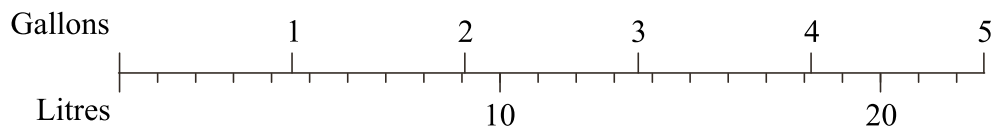
2) This scale shows degrees Centigrade.



a) What temperature is the arrow pointing to?

b) Draw an arrow which points to -17°C .

3) This is a diagram for converting between gallons and litres.



Use the diagram to convert

a) 3 gallons to litres.

b) 4.5 gallons to litres.

c) 6 litres to gallons.

- 1) Calculate the difference in hours and minutes between 9.30 am and 2.45 pm.
- 2) Calculate the difference in hours and minutes between 11 35 and 13 25.
- 3) The table shows the distances in kilometres between some cities in the USA.

San Francisco			
4827	New York		
4990	2132	Miami	
668	4541	4375	Los Angeles
3493	1352	2183	3366
			Chicago

- a) Write down the distance between San Francisco and Miami.

One of the cities in the table is 4541 km from Los Angeles.

- b) Write down the name of this city.
- c) Write down the name of the city which is furthest from Chicago.

- 4) Here is part of a train timetable

Manchester	05 15	06 06	06 45	07 05	07 15	07 46
Stockport	05 26	06 16	06 55	07 15	07 25	07 55
Macclesfield	05 39	06 29	07 08		07 38	08 08
Stoke	05 54	06 45	07 24		07 54	08 24
Stafford	06 12		07 41		08 11	
Euston	08 09	08 26	09 06	09 11	09 50	10 08

- a) Tim catches the 06 06 train from Manchester.

At what time should he expect to arrive at Euston?

- b) Jenny arrives at the Stockport train station at 07 00

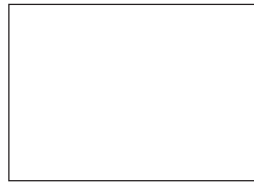
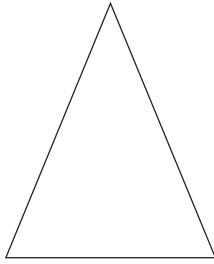
- (i) How long should she expect to wait for a train to Stoke?
- (ii) How long should her train journey take?

- c) Sarah needs to travel to Euston from Macclesfield.

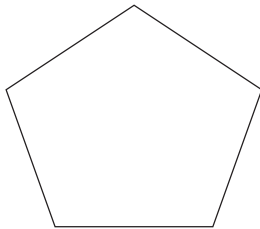
She has to arrive at Euston before 09 30.

What is the departure time of the latest train she can catch to get there on time?

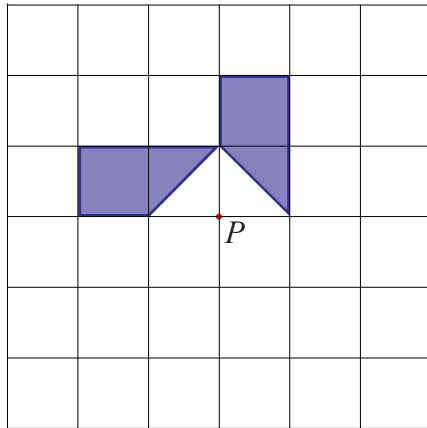
- 1) Draw all the lines of symmetry on the triangle and the rectangle.



- 2) What is the order of rotational symmetry of the two shapes below?



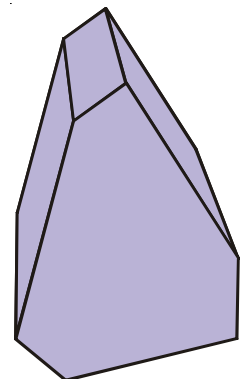
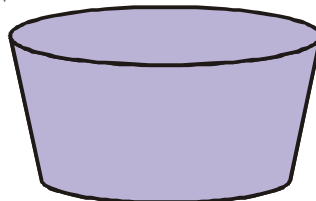
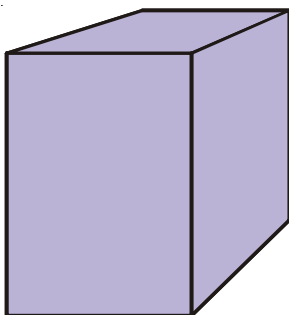
- 3) The diagram below, shows part of a shape.



The shape has rotational symmetry of order 4 about point P .

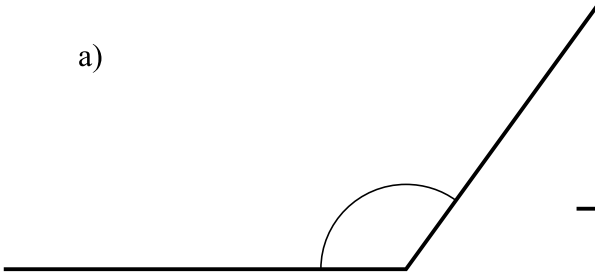
Complete the shape.

- 4) On each of the shapes below, draw one plane of symmetry.

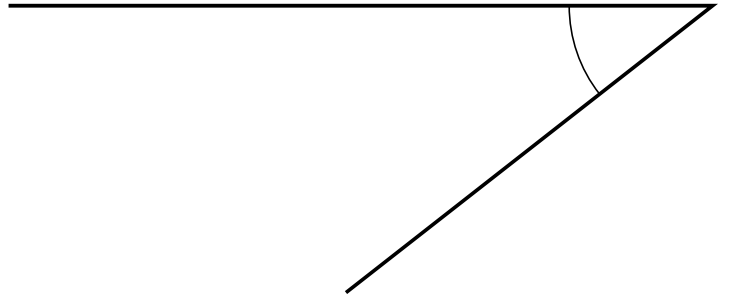


1) Write the name of each angle, below.

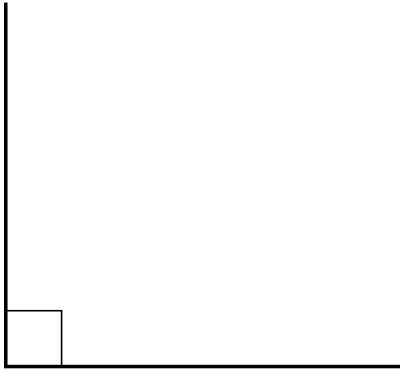
a)



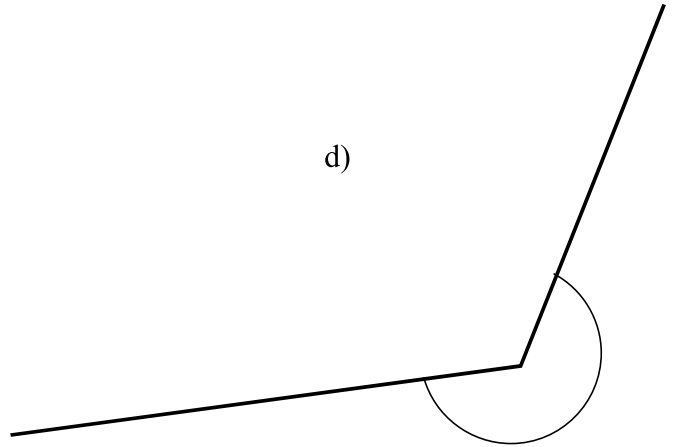
b)



c)



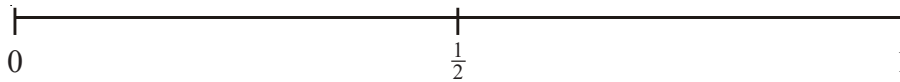
d)



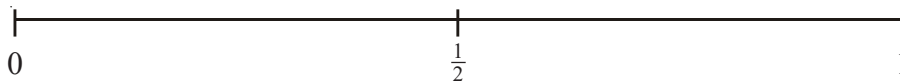
2) Draw a triangle which contains:

- Three acute angles.
- One obtuse angle and two acute angles.
- A right angle.

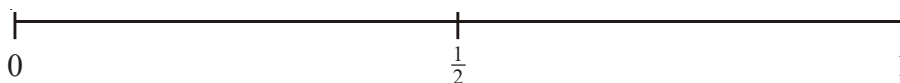
- 1) a) On the probability scale below, mark with a cross (×) the probability that it will snow in Birmingham in July.



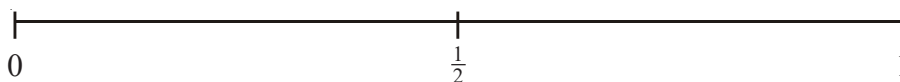
- b) On the probability scale below, mark with a cross (×) the probability that it will rain in Wales next year.



- c) On the probability scale below, mark with a cross (×) the probability that you will get a tail when you flip a fair coin.



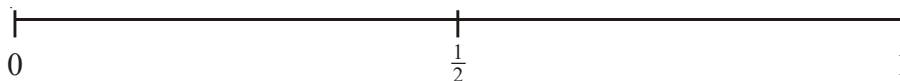
- d) On the probability scale below, mark with a cross (×) the probability that you will get a number bigger than 4 when you roll an ordinary dice.



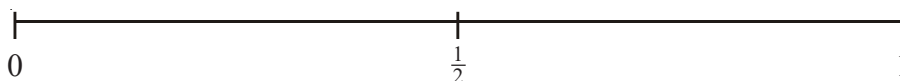
- 2) 4 jelly babies are in a bag.
2 are red, 1 is green and 1 is black.

Without looking in the bag, a jelly baby is taken out.

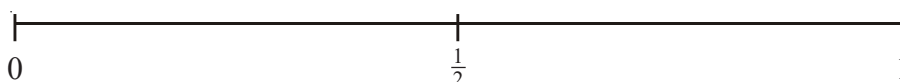
- a) On the probability scale below, mark with a cross (×) the probability that the jelly baby taken from the bag is green.



- b) On the probability scale below, mark with a cross (×) the probability that the jelly baby taken from the bag is green or black.



- c) On the probability scale below, mark with a cross (×) the probability that the jelly baby taken from the bag is red or black.



Tally Charts and Bar Charts

- 1) Here is a list of coins in Yvonne's purse.

5p £1 20p 1p 50p

10p £1 5p 50p 2p

5p 5p £1 1p 5p

£1 2p 5p 5p 2p

Coin	Tally	Frequency

Complete the table for this information.

- 2) Tim made a note of how many minutes he spent on the internet over the period of a week. His results are as follows:

Monday 20 mins

Tuesday 30 mins

Wednesday 60 mins

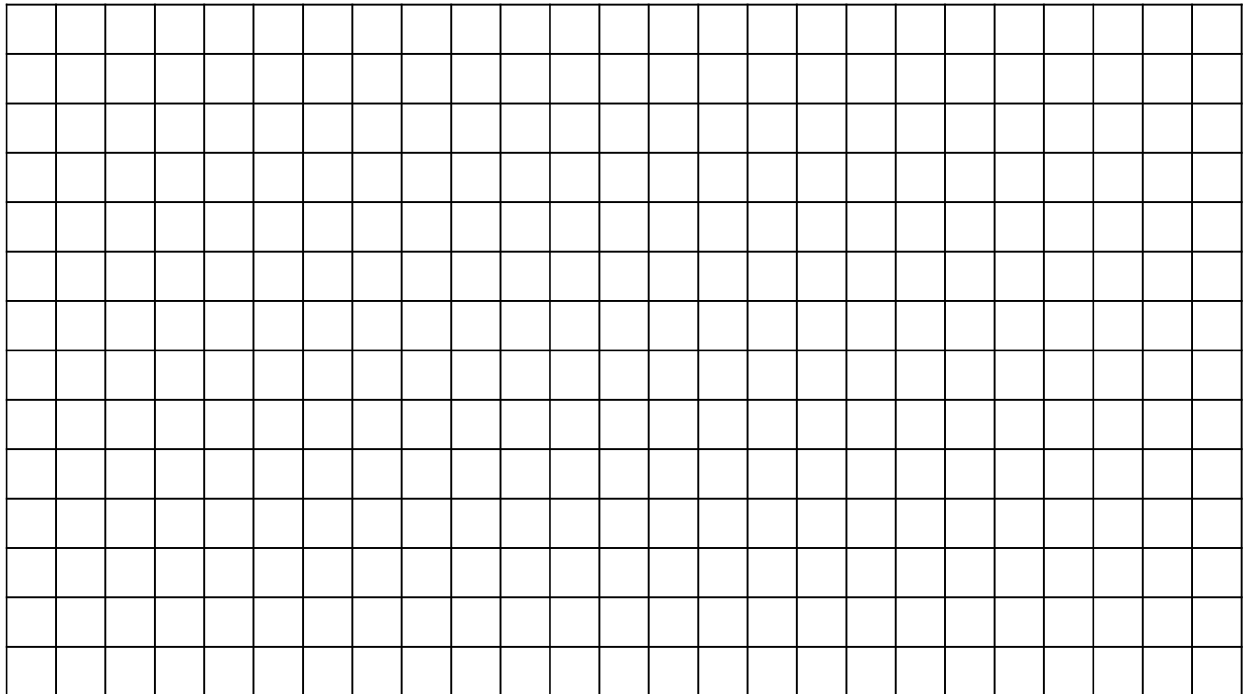
Thursday 40 mins

Friday 20 mins

Saturday 50 mins

Sunday 40 mins

Draw a bar chart to show this information.



1) a)
$$\begin{array}{r} 42 \\ + 26 \\ \hline \end{array}$$

b)
$$\begin{array}{r} 57 \\ + 38 \\ \hline \end{array}$$

c)
$$\begin{array}{r} 96 \\ + 75 \\ \hline \end{array}$$

2) a)
$$\begin{array}{r} 637 \\ + 961 \\ \hline \end{array}$$

b)
$$\begin{array}{r} 983 \\ + 442 \\ \hline \end{array}$$

c)
$$\begin{array}{r} 969 \\ + 758 \\ \hline \end{array}$$

3) a) $452 + 38$ b) $147 + 763$ c) $813 + 431 + 38$

- 4) There were two exhibitions at the NEC one Sunday.
3816 people went to one of the exhibitions and 13427 people went to the other exhibition.
How many people went to the NEC, in total, on the Sunday?

5) a) $2.6 + 1.2$ b) $2.74 + 6.81$ c) $45.36 + 6.81$

6) a) $23 + 1.5$ b) $13.6 + 38$ c) $13.2 + 17.82$

1) a)
$$\begin{array}{r} 78 \\ -42 \\ \hline \end{array}$$

b)
$$\begin{array}{r} 74 \\ -26 \\ \hline \end{array}$$

c)
$$\begin{array}{r} 62 \\ -39 \\ \hline \end{array}$$

2) a)
$$\begin{array}{r} 485 \\ -291 \\ \hline \end{array}$$

b)
$$\begin{array}{r} 773 \\ -486 \\ \hline \end{array}$$

c)
$$\begin{array}{r} 100 \\ -34 \\ \hline \end{array}$$

3) a) $653 - 48$ b) $362 - 183$ c) $2000 - 461$

- 4) There were two films showing at a cinema one Saturday.
One of the films was shown in a large room and the other was in a smaller room.
The film in the larger room was watched by a total of 3562 people.
The film in the smaller room was watched by 1671 people.
How many more people saw the film in the larger room?

5) a) $782 + 426 - 278$ b) $8162 + 1149 - 799$

1) Work out

a) 13×18

b) 135×27

c) 116×41

d) 264×43

e) 326×24

f) 281×59

g) 286×48

h) 428×34

i) 461×45

2) “MathsWatch Travel” has 36 coaches.

Each of these coaches can carry 53 passengers.

How many passengers in total can all the coaches carry?

3) “MathsWatch Tours” has a plane that will carry 47 passengers.

To fly from Manchester to Lyon, each passenger pays £65

Work out the total amount that the passengers pay.

4) A Science textbook costs £13.

Mr Jones buys a class set of 34 books.

How much do they cost him?

5) A graphical calculator costs £18.

How much would 43 calculators cost?

- 1) Work out
 - a) $325 \div 5$
 - b) $448 \div 8$
 - c) $221 \div 13$
 - d) $377 \div 29$
 - e) $27 \div 6$
 - f) $123 \div 15$
 - g) $75 \div 4$
 - h) $135 \div 20$
 - i) $381 \div 12$

- 2) A box can hold 19 books.
Work out how many boxes will be needed to hold 646 books.

- 3) The distance from Glasgow to Paris is 1290 km.
A flight from Glasgow to Paris lasts 3 hours.

Given that

$$\text{Average speed} = \frac{\text{Distance}}{\text{Time}}$$

Work out the average speed of the aeroplane in km/h.

- 4) Pencils cost 25p each.
Mr Smith spends £15 on pencils.
Work out the number of pencils he gets.
- 5) Yesterday, Gino was paid £19.61 for delivering pizzas.
He is paid 53p for each pizza he delivers.
Work out how many pizzas Gino delivered yesterday.

- 6) Emma sold 38 teddy bears for a total of £513
She sold each teddy bear for the same price.
Work out the price at which Emma sold each teddy bear.

7)

Canal boat for hire
£1855.00
for 14 days

Work out the cost per day of hiring the canal boat.

- 8) A teacher has £539 to spend on books.
Each book costs £26
How many books can the teacher buy?
- 9) John delivers large wooden crates with his van.
The weight of each crate is 68 kg.
The greatest weight the van can hold is 980 kg.
Work out the greatest number of crates that the van can hold.

1) Tony buys

4 kg of potatoes at £1.60 per kilogram

and

2 kg of onions at £1.80 per kilogram.

She pays with a £20 note.

How much change should she receive?

2)

Bags of sweets
£1.50 per bag
Buy 3, get 1 free

How many bags of sweets can you buy for £9?



3)

Cinema Prices

Adult	£2.99
Child	£2.30
Family ticket (2 adults and 2 children)	£9.00

a) 1 adult and 7 children went to the cinema.

How much did they pay altogether?

b) 2 adults and 2 children went to the cinema and bought a family ticket.

How much did they save altogether?

- 1) At midnight, the temperature was -7°C .
 By 7am the next morning, the temperature had increased by 6°C .
 a) Work out the temperature at 7am the next morning.

At midday, the temperature was 3°C .

- b) Work out the difference between the temperature at midday and the temperature at midnight.
 c) Work out the temperature which is halfway between -7°C and 3°C .
- 2) The table below gives the temperature recorded on 25th December in 7 cities across the world.

City	Edinburgh	London	New York	Moscow	Paris	Rome	Cairo
Temperature	-6°C	0°C	-15°C	-23°C	3°C	5°C	18°C

- a) Which city recorded the lowest temperature?
 b) What is the difference in temperature between New York and Paris?
 c) What is the difference in temperature between Cairo and Edinburgh?
 d) The temperature in Madrid was 9°C lower than in Rome.
 What was the temperature in Madrid?
 e) The temperature in Mexico City was 6°C higher than in New York.
 What was the temperature in Mexico City?
- 3) The table shows the temperature on the surface of each of five planets.

Planet	Temperature
Venus	210°C
Jupiter	-150°C
Saturn	-180°C
Neptune	-210°C
Pluto	-230°C

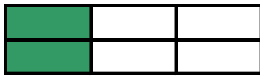
- a) Work out the difference in temperature between Jupiter and Pluto.
 b) Work out the difference in temperature between Venus and Saturn.
 c) Which planet has a temperature 30°C lower than Saturn?

The temperature on Mars is 90°C higher than the temperature on Jupiter.

- d) Work out the temperature on Mars.

1) What fraction of each of the following shapes is shaded?

a)



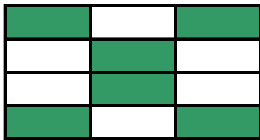
b)



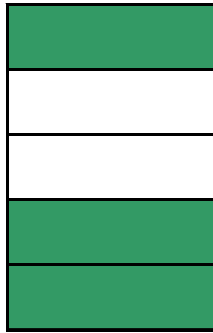
c)



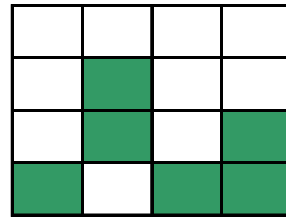
d)



e)

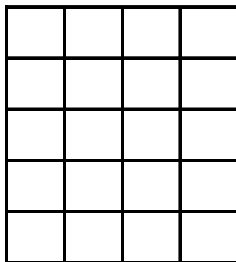


f)

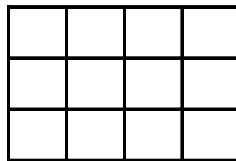


2) Shade the given fraction in the following grids.

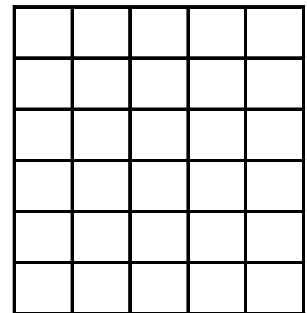
$$\frac{3}{5}$$



$$\frac{1}{4}$$



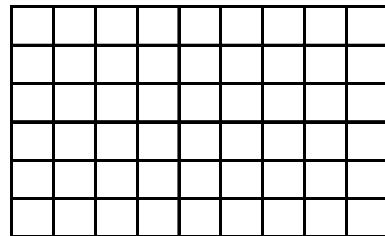
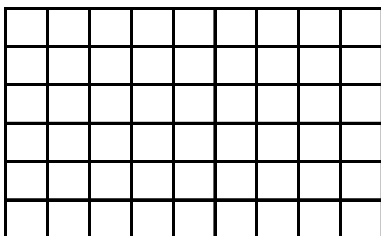
$$\frac{4}{6}$$



3) Which of these fractions is the smallest?

$$\frac{5}{6} \text{ or } \frac{7}{9}$$

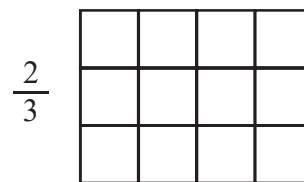
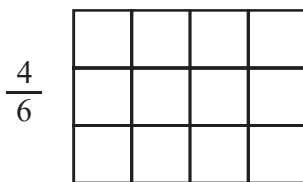
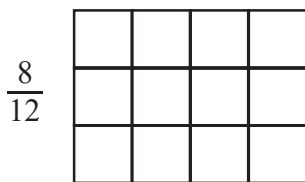
(use the grids to help)



Equivalent Fractions

1) Each of the grids below has a fraction written at the side of it.

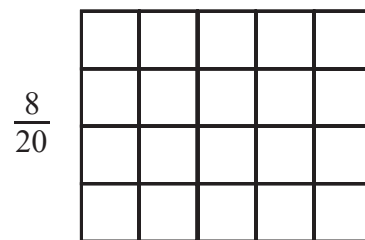
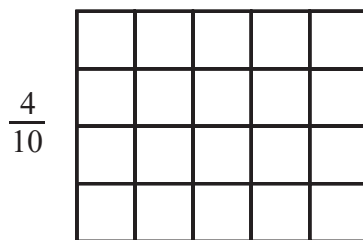
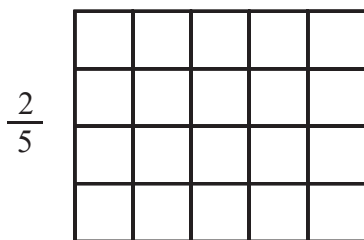
a) Shade the grids to show these fractions.



b) What do you notice about how many little squares are shaded in each grid?

2) Each of the grids below has a fraction written at the side of it.

a) Shade the grids to show these fractions.



b) What do you notice about how many little squares are shaded in each grid?

3) Find the missing values in these equivalent fractions.

$$\frac{1}{2} = \frac{2}{\square} = \frac{3}{\square} = \frac{4}{\square}$$

4) Find the missing values in these equivalent fractions.

$$\frac{2}{5} = \frac{6}{\square} = \frac{\square}{30} = \frac{14}{\square}$$

5) How do you know that $\frac{3}{7}$ is not equivalent to $\frac{25}{56}$?

1) Write the following fractions in their simplest forms

a) $\frac{2}{4}$

b) $\frac{5}{10}$

c) $\frac{4}{6}$

d) $\frac{6}{9}$

e) $\frac{12}{15}$

f) $\frac{8}{12}$

g) $\frac{15}{20}$

2) Write the following fractions in their simplest forms

a) $\frac{9}{30}$

b) $\frac{14}{18}$

c) $\frac{7}{49}$

d) $\frac{48}{72}$

e) $\frac{60}{75}$

f) $\frac{15}{27}$

g) $\frac{72}{96}$

- 1) Round these numbers to the nearest 10:
 - a) 26
 - b) 62
 - c) 75
 - d) 231
 - e) 797
 - f) 5 842
 - g) 9 875
 - h) 13 758

- 2) Round these numbers to the nearest 100:
 - a) 78
 - b) 223
 - c) 549
 - d) 1 450
 - e) 1 382
 - f) 4 537
 - g) 9 193
 - h) 17 625

- 3) Round these numbers to the nearest 1000:
 - a) 850
 - b) 1 455
 - c) 3 230
 - d) 7 500
 - e) 8 455
 - f) 9 690
 - g) 12 390
 - h) 28 910

- 1) Round the following numbers to 1 decimal place
 - a) 13.681
 - b) 344.7234
 - c) 0.76133

- 2) Round the following numbers to 2 decimal places
 - a) 58.8136
 - b) 14.22731
 - c) 203.86884

- 3) Round the following numbers to 1 decimal place
 - a) 48.9732
 - b) 163.9299
 - c) 19.952

- 4) Round the following numbers to 2 decimal places
 - a) 10.697
 - b) 8.993
 - c) 14.9964

- 5) Work out the answer to 2.6882×14.71728 and give your answer correct to 2 decimal places.

- 6) Work out the answer to $64.2 \div 5.7$ and give your answer correct to 1 decimal place.

- 7) Work out the answer to 4.74^2 giving your answer correct to 2 decimal places.

- 8) Find the answer to $\sqrt{17.3}$ giving your answer correct to 1 decimal place.

1) Write the following ratios in their simplest form:

- a) $6 : 9$
- b) $10 : 5$
- c) $7 : 21$
- d) $4 : 24$
- e) $12 : 40$
- f) $4 : 2 : 8$
- g) $18 : 63 : 9$

2) Write the missing value in these equivalent ratios:

- a) $3 : 5 = 12 : \square$
- b) $4 : 9 = \square : 27$
- c) $\square : 7 = 16 : 14$

3) The ratio of girls to boys in a class is $4 : 5$.

What fraction of the class are girls?

4) A model of a plane is made using a scale of $1 : 5$.

- a) If the real length of the plane is 20 m, what is the length of the model?
- b) If the wings of the model are 1.2 m long, what is the actual length of the wings on the plane?

- 1) Here are the ingredients needed to make 8 pancakes.
James makes 24 pancakes.

Pancakes
Ingredients to make 8 pancakes
250 ml milk
1 egg
140 g flour
5 g butter

- a) Work out how much milk he needs.

Kate makes 12 pancakes.

- b) Work out how much flour she needs.



- 2) Here are the ingredients for making fish pie for 6 people.

Fish pie for 6 people
180 g flour
240 g fish
80 g butter
4 eggs
180 ml milk

Jill makes a fish pie for 3 people.

- a) Work out how much flour she needs.

Tim makes a fish pie for 15 people.

- b) Work out how much milk he needs.



- 3) Here are the ingredients for making pineapple sorbet for 6 people.

Pineapple sorbet for 6 people
800 g of pineapple
4 egg whites
½ lemon
100 g caster sugar

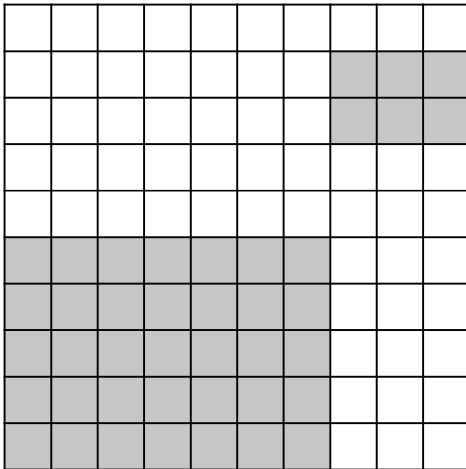
Trevor makes pineapple sorbet for 18 people.

- a) Work out how much caster sugar he uses.

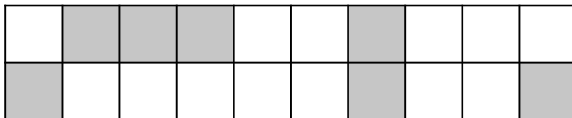
Sid makes a pineapple sorbet.
He uses 2 lemons.

- b) Work out how many people he makes pineapple sorbet for.

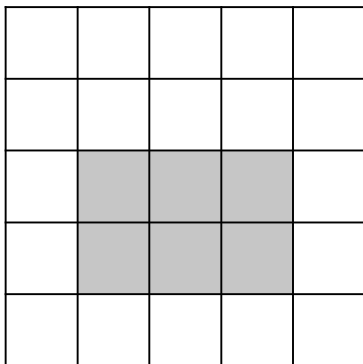
- 1) What percentage of this grid is shaded?



- 2) What percentage of this grid is shaded?

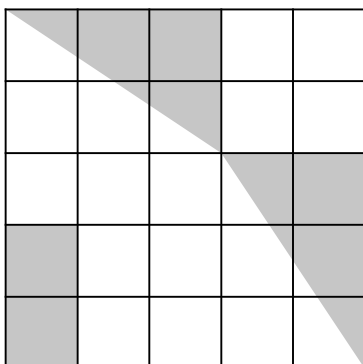


- 3) a) What percentage of this grid is shaded?



- b) How many more squares should be shaded to make 80% of the grid shaded?

- 4) What percentage of this grid is shaded?



- 1) Which of the following offer better value for money?

Working must be shown

a) 200ml of toothpaste for 50p or 400ml of toothpaste for 90p

b) 600g of bananas for 70p or 200g of bananas for 22p

c) 2 litres of paint for £1.60 or 5 litres of paint for £3.50

d) 60 teabags for £1.62 or 40 teabags for £0.96



- 2) Which of these is the best buy?

20 exercise books
for £4.00

35 exercise books
for £7.80

- 3) Hamza needs to buy 2 litres of paint.

At the shop he gets two choices:

500ml for £2.55 or 1 litre for £4.79.

a) Work out which of these would be the best buy for Hamza.

b) How much does he save if he buys the 'best buy' rather than the 'worst buy'?

You must show all your working.



- 4) Honey pots are sold in two sizes.

A small pot costs 45p and weighs 450g.

A large pot costs 80p and weighs 850g.

Which pot of honey is better value for money?

You must show all your working.

- 1) 8 bananas cost £4
Work out the cost of 5 bananas.
- 2) Emily bought 4 identical pairs of socks for £3.60
Work out the cost of 9 pairs of these socks.
- 3) The price of 36 chocolates is £7.20
Work out the cost of 8 chocolates.

- 4) Theresa bought 5 theatre tickets for £60
Work out the cost of 9 theatre tickets.
- 5) Jenny buys 4 folders.
The total cost of these 4 folders is £6.40
Work out the total cost of 7 of these folders.

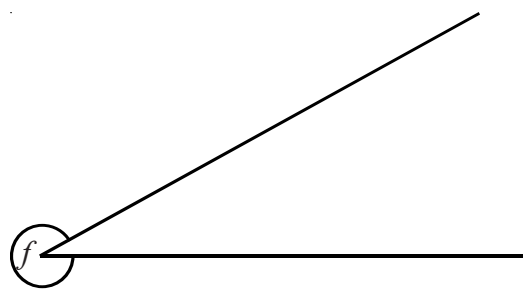
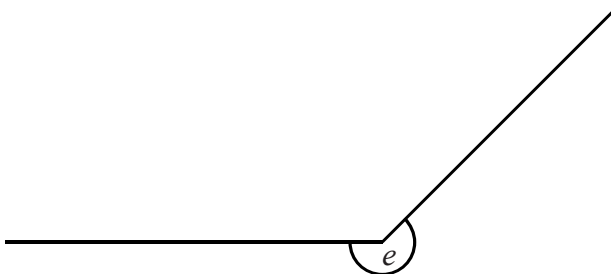
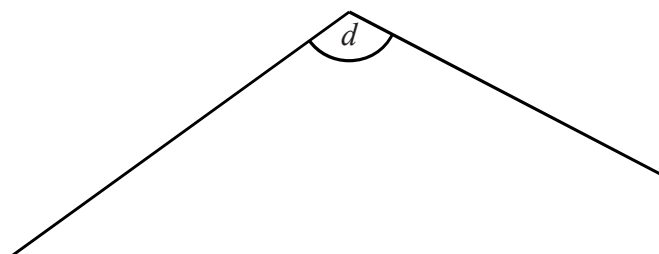
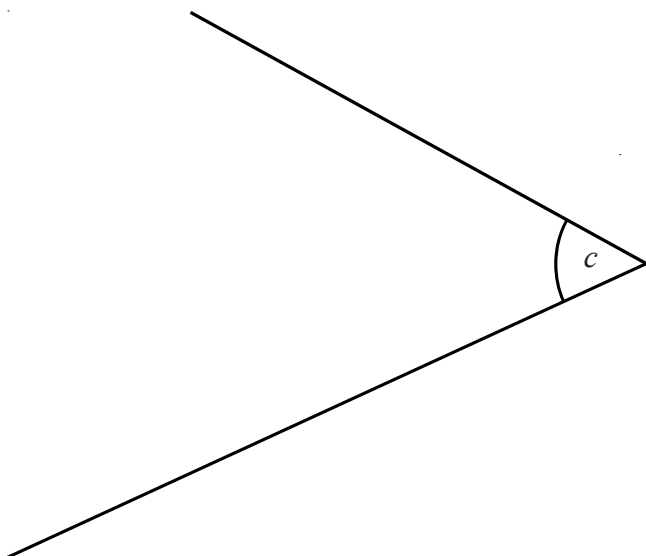
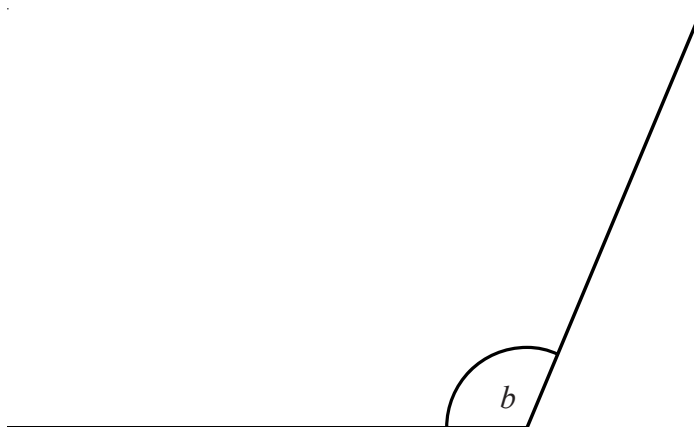
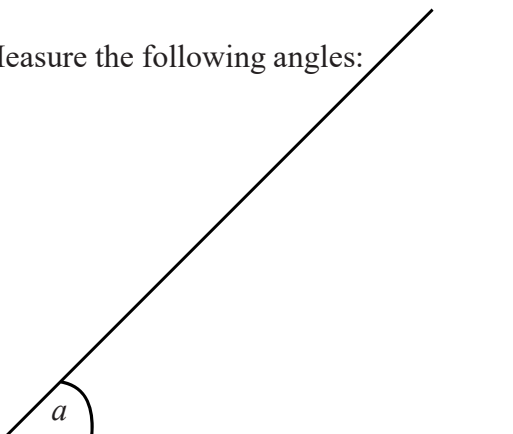


- 6) The cost of 15 litres of petrol is £12
Work out the cost of 20 litres of petrol.



- 7) 3 maths books cost £7.47
Work out the cost of 5 of these.
- 8) 1 person can cut a large area of grass in 5 hours.
How long would it take 2 people to cut the grass?
- 9) 5 people take 12 hours to build a wall.
How long would it take 3 people to build the wall?
- 10) 9 people can paint a bridge in 5 hours.
How long would it take 2 people to paint the bridge?

1) Measure the following angles:

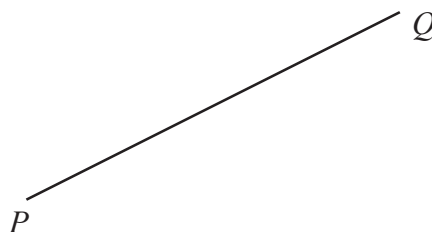


2) Draw the following angles:

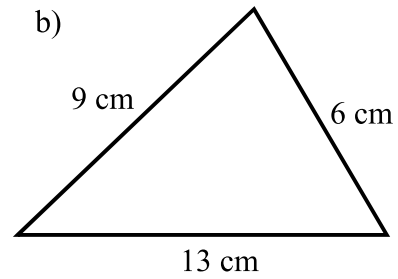
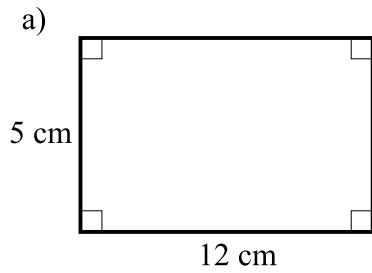
a) Angle $ABC = 60^\circ$

b) Angle $PQR = 127^\circ$

c) Angle $XYZ = 275^\circ$



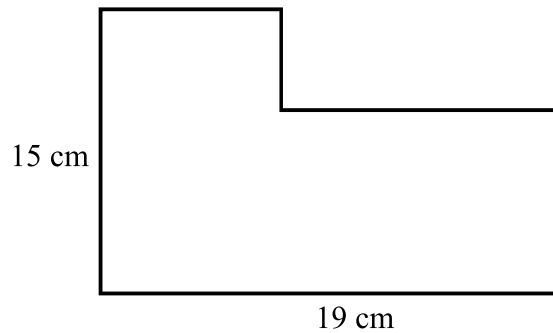
- 1) Find the perimeters of the following two shapes.



- 2) The length of a rectangle is 9 cm.
The total perimeter is 30 cm.

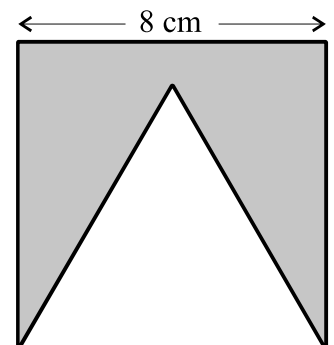
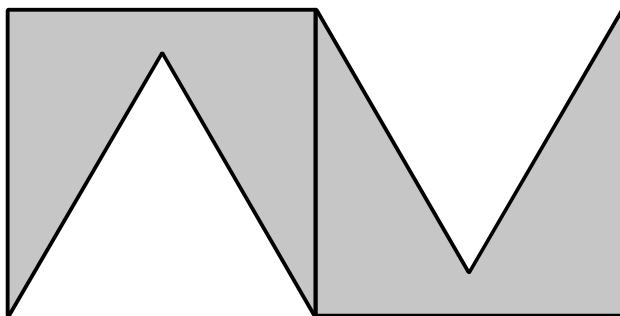
Calculate the length of the width of the rectangle.

- 3) Work out the perimeter of this L shape.



- 4) This shape is made by cutting out an equilateral triangle from a square.

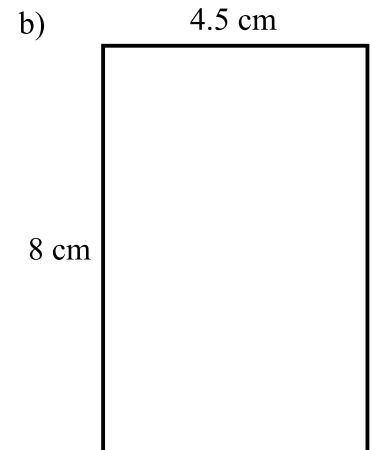
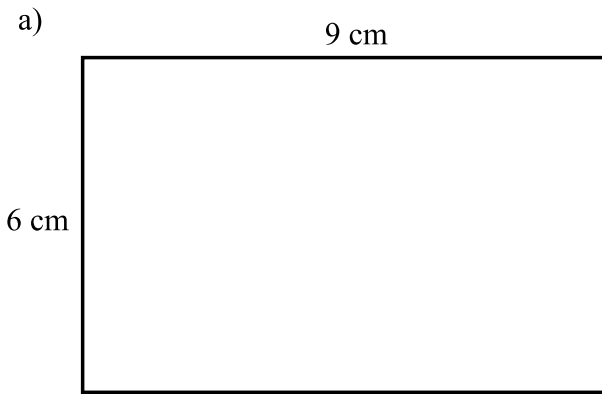
Two of these shapes are then put together to make this shape.



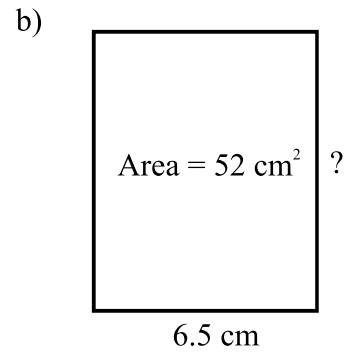
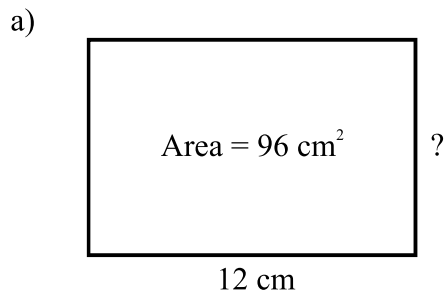
Work out the perimeter of this new shape.

Area of a Rectangle

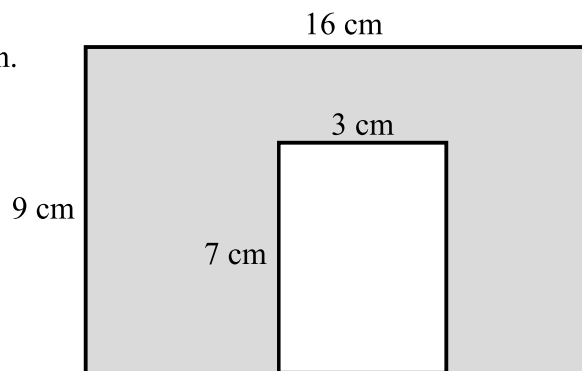
- 1) Find the areas of these two rectangles.



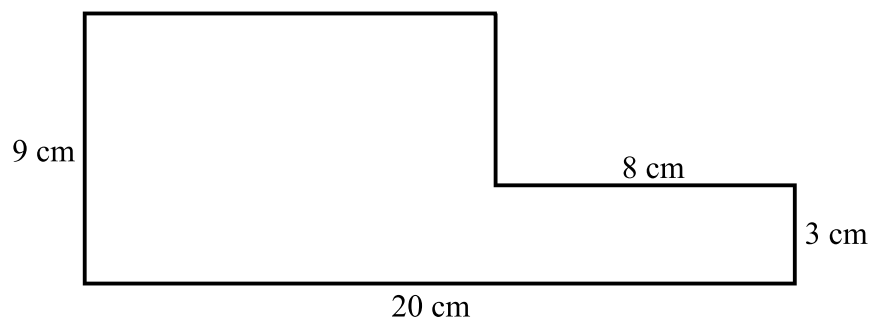
- 2) Find the size of the missing sides in these two rectangles.



- 3) Find the area of the shaded section.



- 4) Find the area of the L shape.





- 1) Kaya made a list of his homework marks.

3 2 3 4 1 4 5 4

- Write down the mode of Kaya's marks.
- Work out his mean homework mark.

- 2) Lydia rolled an 8-sided dice ten times.
Here are her scores.

5 1 2 5 3 8 6 6 3 2

- Work out Lydia's median score.
- Work out the mean of her scores.



- 3) In a two-week period, a train was this many minutes late each day:

3 0 0 0 7 4 5 2 0 1 14 0 5 1

- What was the mean average number of minutes late?
- What was the median average number of minutes late?



- 4) Two small Year 10 classes, Set A and Set B, sat the same Science test.

Set A had these scores for the test:

63%, 71%, 48%, 95%, 46%, 82%, 77%, 36%, 73%

Set B had these scores:

58%, 63%, 85%, 61%, 59%, 38%, 90%, 84%, 75%, 48%

How much bigger was Set B's mean average score than Set A's mean average score?
Give your answer correct to 1 decimal place.



- 5) A rugby team played six games.

The mean score for the six games is 15

The rugby team played one more game.

The mean score for all seven games is 16

Work out the number of points the team scored in the seventh game.

1) Work out

a) 6×0.2

b) 0.2×0.3

c) 0.4×7

d) 0.2×0.8

e) 0.03×0.9

f) 1.5×0.2

2) A box contains 7 books, each weighing 2.5 kg.

Work out the total weight of the box.

3) Jim takes 13 boxes out of his van.

The weight of each box is 25.5 kg.

Work out the total weight of the 13 boxes.

4) Tim has a job which pays £6.85 per hour.

If he works for 34 hours, one week, how much does he earn?

5) Sue has a part-time job and the hourly pay is £7.50 per hour.

How much does she earn if she works for 8.5 hours, one week?

6) Fencing costs £13.25 per metre.

How much does 12.5 m cost?

1) Work out

a) $9 \div 0.3$

b) $6 \div 0.1$

c) $12 \div 0.4$

d) $25 \div 0.5$

e) $21 \div 0.3$

f) $15 \div 0.2$

2) Work out

a) $3.6 \div 0.4$

b) $0.8 \div 0.2$

c) $2.4 \div 0.4$

d) $0.56 \div 0.08$

e) $5.5 \div 0.05$

f) $8.1 \div 0.09$

3) John takes boxes out of his van.

The total weight of the boxes is 4.9 kg

The weight of each box is 0.7 kg

Work out the number of boxes in John's van.

4) Mr Rogers bought a bag of elastic bands for £6

Each elastic band costs 12p.

Work out the number of elastic bands in the bag.

1) Work out the following:

a) $2 - 7$

b) $4 - 6$

c) $1 - 8$

d) $0 - 4$

2) Work out the following:

a) $-3 + 2$

b) $-7 + 5$

c) $-3 + 8$

d) $-9 + 11$

3) Work out the following:

a) $-1 - 3$

b) $-4 - 5$

c) $-7 - 8$

d) $-2 - 12$

4) Work out the following:

a) $6 - -3$

b) $-3 - -5$

c) $-9 - -2$

d) $1 - -13$

5) Work out the following:

a) -3×4

b) 5×-2

c) -4×-5

d) -6×-3

6) Work out the following:

a) $12 \div -4$

b) $-20 \div -2$

c) $-15 \div 3$

d) $-100 \div -5$

1) Work out these amounts.

a) $\frac{3}{4}$ of £20

b) $\frac{2}{3}$ of 60 kg

c) $\frac{3}{8} \times 24$

d) $150 \times \frac{2}{3}$

e) $\frac{2}{9}$ of 180 cm

f) $49 \times \frac{4}{7}$

g) $60 \times \frac{1}{4}$

h) $\frac{5}{8}$ of £48

i) $4000 \times \frac{7}{8}$

2) There are 600 apples on a tree and there are maggots in $\frac{3}{5}$ of them.

How many apples have maggots in them?

3) Liz and Lee are travelling in a car from Glasgow to Poole (770 km).

At midday they had already travelled $\frac{5}{7}$ of the total distance.

What distance, in km, had they travelled by midday?

4) A digital camera that cost £49 was sold on eBay for $\frac{3}{7}$ of the original price.

What was the selling price?

5) Yesterday Thomas travelled a total of 175 miles.

He travelled $\frac{2}{5}$ of this distance in the morning.

How many miles did he travel during the rest of the day?

6) Debra received her £15 pocket money on Saturday.

She spent $\frac{1}{3}$ of her pocket money on magazines.

She spent $\frac{2}{5}$ of her pocket money on a necklace.

How much of the £15 did she have left?

1) $6 \times 5 + 2$

2) $2 + 6 \times 5$

3) $35 - 4 \times 3$

4) $48 \div (14 - 2)$

5) $27 \div (3 + 6)$

6) $27 \div 3 + 6$

7) $(9 + 2) \times 2 + 5$

8) $4 \times (1 + 4) - 6$

9) $6 \times 4 - 3 \times 5$

10) $\frac{9 + 3}{4 + 2}$

11) $\frac{23 + 9}{7 - 3}$

12) $\frac{7 - 2^2}{4^2 - 15}$

13) $\frac{5^2 + 3}{2 \times 7}$

14) $\frac{5 \times 6 - 4}{13}$

15) $\frac{8 \times 2 - 4}{3 + 1^2}$

16) $\frac{12 - 3 \times 2}{14 \div 7}$

17) $\frac{20 - 3^2}{10 - (5 + 4)}$

18) $\frac{3 + 9 \times 8}{1 + 6 \times 4}$

- 1) Tom and Julie share £48 in the ratio 5 : 3
Work out how much more money Tom gets than Julie gets.

- 2) Ben and Sue share £60 in the ratio 2 : 3
Work out how much each person gets.

- 3) A box contains milk chocolates and plain chocolates only.
The number of milk chocolates to the number of plain chocolates is in the ratio 2 : 1
There are 24 milk chocolates.
Work out the total number of chocolates.

- 4) Andy, Ben and Claire share £54
Ben gets three times as much money as Andy.
Claire gets twice as much money as Ben.

How much money does Claire get?



- 5) There are some marbles in a bag.
18 of the marbles are blue.
12 of the marbles are red.
a) Write down the ratio of the number of blue marbles to the number of red marbles.
Give your ratio in its simplest form.

There are some apples and pears in a box.
The total number of apples and pears is 54.
The ratio of the number of apples to the number of pears is 1 : 5
b) Work out the number of pears in the box.



- 6) A piece of string is 180 cm long.
Jim cuts it into three pieces in the ratio 2 : 3 : 4
Work out the length of the longest piece.



- 7) Sally is 13 years old.
Tammy is 12 years old.
Danny is 10 years old.

Sally, Tammy and Danny share £28 in the ratio of their ages.
Tammy gives a third of her share to her mother.
How much should Tammy now have?

- 1) Increase:

a) 500 by 10%	c) 80 by 15%
b) 320 by 10%	d) 75 by 20%
- 2) Decrease:

a) 400 by 10%	c) 140 by 15%
b) 380 by 10%	d) 35 by 20%
- 3) The price of a laptop is increased by 15%.
The old price of the laptop was £300.
Work out the new price.
- 4) The price of a £6800 car is reduced by 10%.
What is the new price?



- 5) Increase:

a) 65 by 12%	c) 600 by 17.5%
b) 120 by 23%	d) 370 by 17.5%



- 6) Decrease:

a) 42 by 15%	c) 52 by 8.5%
b) 79 by 12%	d) 8900 by 18%



- 7) The price of a mobile phone is £78.40 plus VAT.
VAT is charged at a rate of 17.5%.
What is the total price of the mobile phone?



- 8) In a sale, normal prices are reduced by 7%.
The normal price of a camera is £89.
Work out the sale price of the camera.



- 9) A car dealer offers a discount of 20% off the normal price of a car, for cash.
Peter intends to buy a car which usually costs £6800.
He intends to pay by cash.
Work out how much he will pay.



- 10) A month ago, John weighed 97.5 kg.
He now weighs 4.5% more.
Work out how much John now weighs.
Give your answer to 1 decimal place.