

## Non-Calculator

**Q1.**

15 machines work at the same rate.

Together, the 15 machines can complete an order in 8 hours.

3 of the machines break down after working for 6 hours.

The other machines carry on working until the order is complete.

In total, how many hours does **each** of the other machines work?

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Answer \_\_\_\_\_ hours  
(Total 3 marks)

**Q2.**

A library book was due to be returned on 27 September.

It was actually returned on 14 October.

There is a fine of 8p for every day the book is late.

Work out the total fine.

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Answer £ \_\_\_\_\_  
(Total 3 marks)

**Q3.**

Nadia has £5 to buy pencils and rulers.

Prices	
Pencils	8p each
Rulers	30p each

She says,

“I will buy 15 pencils.

Then I will buy as many rulers as possible.

With my change I will buy more pencils.”

How many pencils and how many rulers does she buy?

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Answer \_\_\_\_\_ pencils, \_\_\_\_\_ rulers  
(Total 6 marks)

**Q4.**

The table shows what you need to make 4 pancakes.

<b>4 pancakes</b>	
	120 g of plain flour
	1 egg
	300 ml of milk

Beth wants to make 12 pancakes.

Complete the table below.

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<b>12 pancakes</b>	
	_____ g of plain flour
	_____ eggs
	_____ ml of milk

**(Total 3 marks)**

**Q5.**

This table shows the ingredients needed to make six flapjacks.

Butter	75 grams
Sugar	60 grams
Oats	175 grams
Syrup	1 tablespoon

Complete the table to show the ingredients needed to make 24 flapjacks.

Butter	_____ grams
Sugar	_____ grams
Oats	_____ grams
Syrup	_____ tablespoons

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**(Total 4 marks)**

**Q6.**

Boxes cost £2.40 each.

You can use this table to work out the cost of different numbers of boxes.

<b>Number of boxes</b>	1	2	5	10
<b>Cost</b>	£2.40	£4.80	£12	£24

- (a) Work out the cost of 3 boxes.

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Answer £ .....

(2)

- (b) Ethan pays £52.80 for some of these boxes.

Work out the number of boxes he buys.

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Answer \_\_\_\_\_

(2)

- (c) Use the table to write £9.60 : £12 as a ratio in its simplest form.

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Answer \_\_\_\_\_ : \_\_\_\_\_

(1)

(Total 5 marks)

**Q7.**

Here is a list of ingredients.

Serves 4 people	
Bacon	50 g
Minced beef	450 g
Chopped tomatoes	400 g
Button mushrooms	100 g
Beef stock	125 ml

Marco is making a meal for 14 people using these ingredients.

Work out the number of grams of minced beef he needs.

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Answer \_\_\_\_\_ g

**(Total 3 marks)**

**Q8.**

Here are some of the ingredients for a pie.

Minced lamb	450 g
Potatoes	900 g
Carrots	75 g
Stock	300 ml

Oliver has only 300 g of minced lamb.

How much of the other ingredients should he use?

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Answer Potatoes \_\_\_\_\_ g

Carrots \_\_\_\_\_ g

Stock \_\_\_\_\_ ml

**(Total 3 marks)**

**Q9.**

$$y = \frac{10}{x}$$

If the value of  $x$  doubles, what happens to the value of  $y$ ?

Circle your answer.

$\div 2$

$\times 2$

$\div 5$

$\times 5$

(Total 1 mark)

**Q10.**

2476 adults watch a cricket match.

The ratio men : women is 3 : 1

How many **more** men than women watch the match?

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Answer \_\_\_\_\_

(Total 3 marks)

**Q11.**

$y$  is directly proportional to  $x$ .

Complete the table.

$x$	-8	0	7
$y$			63

(Total 2 marks)

**Q12.**

(a)  $\text{Density} = \frac{\text{mass}}{\text{volume}}$

The mass of solid A is 6 times the mass of solid B.

The volume of solid A is 3 times the volume of solid B.

Complete the sentence.

The density of solid A is \_\_\_\_\_ times the density of solid B.

(1)

(b)  $\text{Average speed} = \frac{\text{distance}}{\text{time}}$

If the distance is halved and the time is doubled, what happens to the average speed?

Circle your answer.

$\times 2$

$\times 4$

no change

$\div 2$

$\div 4$

(1)

(Total 2 marks)

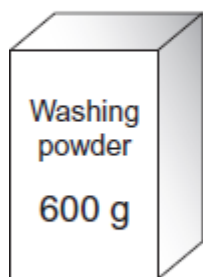




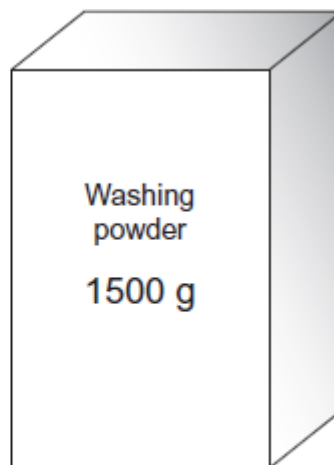


**Q16.**

Washing powder is sold in two sizes, 600 grams and 1500 grams.



£3.30



Was £9.60  
Now 15% off

Which size is better value for money?  
You **must** show your working.

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Answer \_\_\_\_\_

(Total 6 marks)

**Q17.**

A dry cleaning shop has the following offers.

**Suit**



**Normal price £12.50**  
1st suit    normal price  
2nd suit    half price

**Dress**



**Normal price £9.75**  
Three for the price of two

Work out the **total** price for 2 suits and 6 dresses.

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Answer £ \_\_\_\_\_

**(Total 4 marks)**

**Q18.**

Cola is sold in packs of 6 and packs of 8



1 pack of 6 for £1.95  
or  
2 packs of 6 for £3.50



1 pack of 8 for £2.64  
or  
2 packs of 8 for £5.00

What is the cheapest way to buy 48 cans of cola?  
You **must** show your working.

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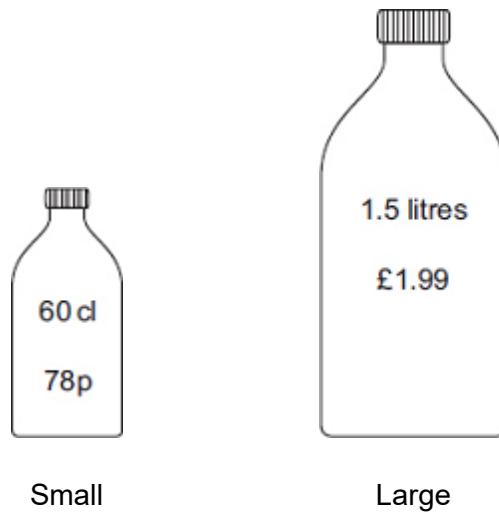
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Answer \_\_\_\_\_

(Total 4 marks)

**Q19.**

The diagram shows two bottles of the same drink.



You are given that 1 litre = 100 cl

Which bottle is better value for money?  
You **must** show your working.

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Answer \_\_\_\_\_

(Total 4 marks)

**Q20.**

$xy = c$  where  $c$  is a constant.

Circle the correct statement.

$y$  is directly proportional to  $x$

$y$  is directly proportional to  $\frac{1}{x}$

$y$  is inversely proportional to  $\frac{1}{x}$

$x$  is directly proportional to  $y$

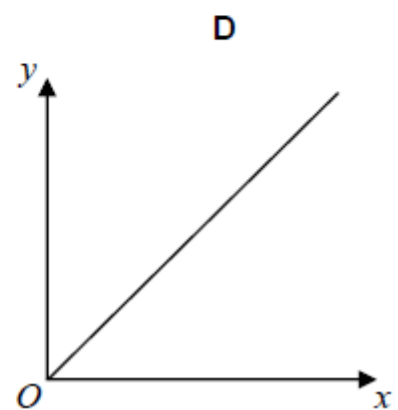
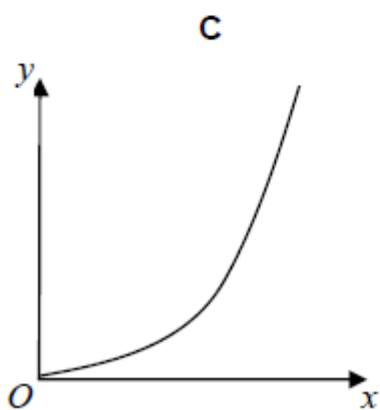
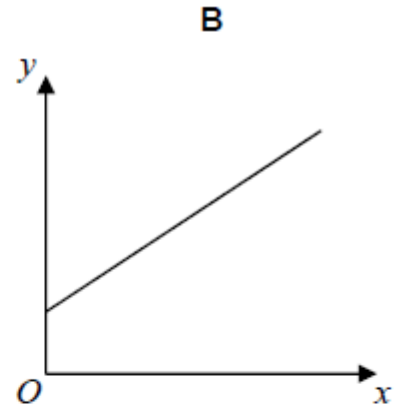
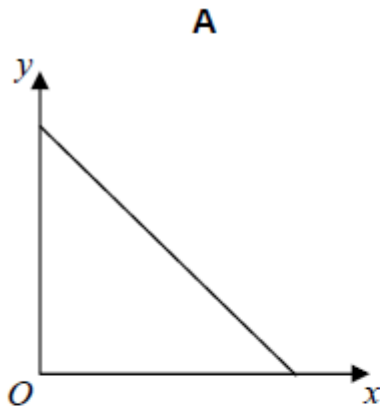
(Total 1 mark)

**Q21.**

$y$  is directly proportional to  $x$ .

Which graph shows this?

Circle the correct letter.



(Total 1 mark)

**Q22.**

$y$  is directly proportional to  $x$  and  $k$  is a constant.

Circle the correct equation.

$y = x + k$

$y = kx$

$y = \frac{k}{x}$

$y = x - k$

(Total 1 mark)

**Q23.**

$$y = \frac{10}{x^2}$$

What happens to the value of  $y$  as the value of  $x$  doubles?  
Circle your answer.

$\times 2$

$\div 2$

$\times 4$

$\div 4$

**(Total 1 mark)**

**Q24.**

$y$  is inversely proportional to  $x$  and  $k$  is a constant.  
Circle the correct equation.

$$y = \frac{k}{x}$$

$$y = kx$$

$$y = \frac{x}{k}$$

$$y = x - k$$

**(Total 1 mark)**