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?

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.

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?

Answer _____ pencils, _____ rulers

(Total 6 marks)

Q4.

The table shows what you need to make 4 pancakes.

4 pancakes
120 g of plain flour 1 egg 300 ml of milk

Beth wants to make 12 pancakes.

Complete the table below.

12 pancakes
_____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

(Total 4 marks)

Q6.

Boxes cost £2.40 each.

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

Number of boxes	1	2	5	10
Cost	£2.40	£4.80	£12	£24

(a) Work out the cost of 3 boxes.

Answer £ .....

(2)

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

Work out the number of boxes he buys.

Answer _____

(2)

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

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.

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?

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.

÷ 2 × 2 ÷ 5 × 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?

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.

× 2 × 4 no change ÷ 2 ÷ 4

(1)

(Total 2 marks)

Calculator

Q13.

Mr Jones works for five days each week.

If he uses his car to travel to work,

each day he drives a total distance of 24.2 miles
his car travels 32.3 miles per gallon of petrol
petrol costs £1.27 per litre.

If he uses the bus to travel to work, he can buy a weekly ticket for £19.50

Use 1 gallon = 4.5 litres

Is it cheaper if he uses his car or the bus to travel to work?

You **must** show your working.

Answer _____

(Total 5 marks)

Q14.

The mass of 40 cm^3 of copper is 356 grams.

Work out the mass of 90 cm^3 of copper.

Answer _____ grams

(Total 2 marks)

Q15.

(a) You are given that 1 mile = 1.6 kilometres

Convert 6 $\frac{1}{2}$ miles into kilometres.

_____

_____

Answer _____ km

(2)

(b) A manufacturer claims a car like mine uses 5.5 litres per 100 km.

My car does 50 miles per gallon.

Is my car using more or less fuel than the manufacturer claims?
You **must** show your working.

_____

_____

_____

_____

_____

_____

_____

_____

_____

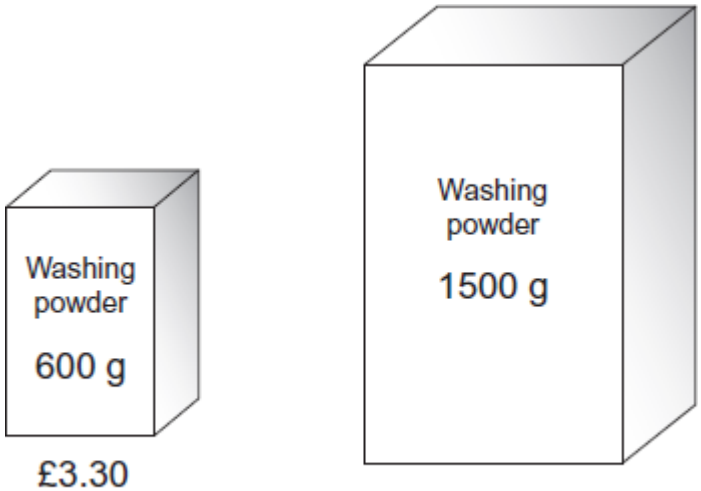
_____

(5)

(Total 7 marks)

Q16.

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



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

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.

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

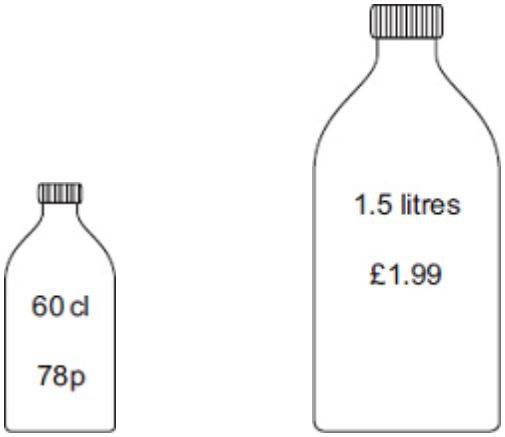
What is the cheapest way to buy 48 cans of cola?
You **must** show your working.

Answer _____

(Total 4 marks)

Q19.

The diagram shows two bottles of the same drink.



Small Large

You are given that 1 litre = 100 cl

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

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)

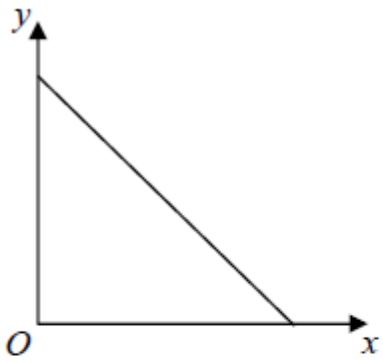
Q21.

y is directly proportional to x.

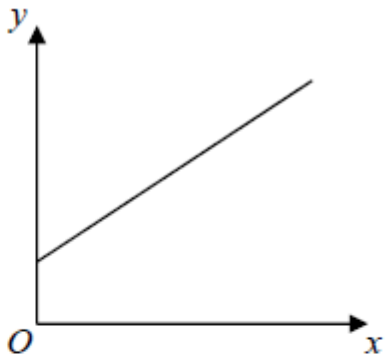
Which graph shows this?

Circle the correct letter.

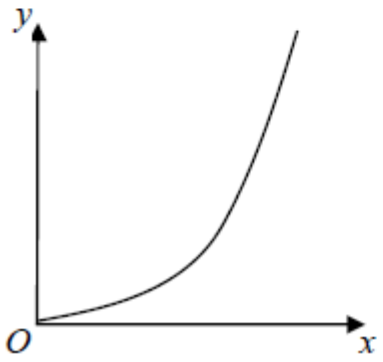
A



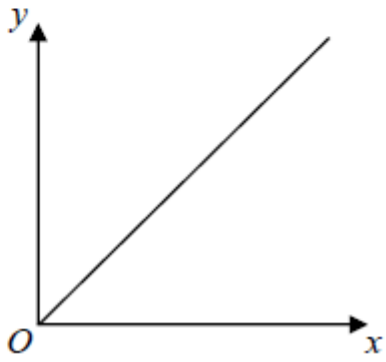
B



C



D



(Total 1 mark)

Q22.

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

$y = x + k$ $\quad$ $y = kx$ $\quad$ $y = \frac{k}{x}$ $\quad$ $y = x - k$

(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.

× 2 ÷ 2 × 4 ÷ 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)