

Name

ANSWERS

Class



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(9 – 1) Topic booklet

Foundation

These questions have been collated from previous years GCSE Mathematics papers.

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser.

Total Marks

Instructions

- Use black ink or ball-point pen.
- Fill in the boxes at the top of this page with your name, centre number and candidate number.
- Answer all questions.
- Answer the questions in the spaces provided
 - there may be more space than you need.
- Diagrams are NOT accurately drawn, unless otherwise indicated.
- You must show all your working out.
- If the question is a 1F question you are not allowed to use a calculator.
- If the question is a 2F or a 3F question, you may use a calculator to help you answer.

Information

- The marks for each question are shown in brackets
 - use this as a guide as to how much time to spend on each question.

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Answer ALL questions
Write your answers in the space provided.
You must write down all the stages in your working.

10 Suha is going to buy 150 envelopes.



Here is some information about the cost of envelopes in two shops.

Letters2send

Pack of 25 envelopes for £3.49

Stationery World

Pack of 10 envelopes for £2.10
Buy 2 packs get 1 pack free

Suha wants to buy the envelopes as cheaply as possible.

Which shop should Suha buy the 150 envelopes from?

You must show how you get your answer.

$$\frac{150}{25} = 6$$

$$6 \times £3.49 = £20.94$$

$$30 \text{ envelopes} = £4.20$$

$$5 \times £4.20 = £21$$

Suha should buy the envelopes
from Letters2send.

11 Jack's driving school has two offers.



Offer 1

First driving lesson free

All other driving lessons normal price

Offer 2

All driving lessons

5% off the normal price

The normal price of a driving lesson is £24

Douglas is going to have 12 driving lessons.

Which is the cheaper offer for 12 driving lessons, Offer 1 or Offer 2?

You must show how you get your answer.

$$11 \times £24 = \underline{\underline{£264}}$$

$$12 \times £24 = £288$$

$$288 \times 0.95$$

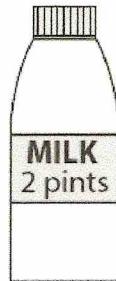
$$= \underline{\underline{£273.60}}$$

Offer 1 is cheaper.

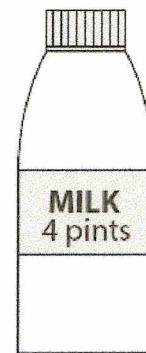
November 2017 – Paper 3F

(Total for Question 11 is 3 marks)

13 A shop has two different special offers on milk.



75p



£1.28

Pay for 2 bottles
get 1 bottle free

Pay for 1 bottle
get 1 bottle half price

Which offer gives the better value for money?
You must show how you get your answer.

$$6 \text{ pints} = £1.50$$

$$1 \text{ pint} = \underline{25p}$$

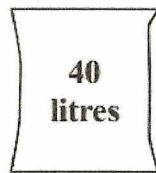
$$8 \text{ pints} = £1.28 + 64p$$

$$8 \text{ pints} = £1.92$$

$$1 \text{ pint} = \underline{24p}$$

The 4 pint offer is better value for money

- 14 A shop sells compost in 20 litre bags and in 40 litre bags.
One day the shop had two special offers for the compost.



2 bags for £3.50

3 bags for £9

Which offer is the better value for money?
You must show how you get your answer.

$$40 \text{ litres} = £3.50$$

$$10 \text{ litres} = \underline{87.5p}$$

$$120 \text{ litres} = £9$$

$$10 \text{ litres} = \underline{75p}$$

The 40 litre offer is better value for money

15 Here are the costs of the same type of batteries in two shops.

Shop A	Shop B
Pack of 4 batteries £1.60	Pack of 6 batteries £2.70



Harry needs to buy at least 30 batteries.

He assumes that he has to buy batteries in whole packs.

Harry wants to buy the batteries as cheaply as possible from the same shop.

(a) Which shop should he buy the batteries from, shop A or shop B?

You must show all your working.

$$8 \times 4 \text{ bat} = 32 \text{ bat}$$

$$8 \times £1.60 = \underline{\underline{£12.80}}$$

$$5 \times 6 \text{ bat} = 30 \text{ bat}$$

$$5 \times £2.70 = \underline{\underline{£13.50}}$$

Shop A is cheaper to buy the batteries.

(4)

Harry's assumption is wrong.

He can buy single batteries for 40p each in shop A and for 45p each in shop B.

(b) Does this affect which of these two shops Harry should buy the batteries from?

Give a reason for your answer.

Shop A would be even cheaper, shop B would be the same price.

No it doesn't affect which shop is cheaper.

(1)

16 Batteries are sold in packs of 4, in packs of 8 and in packs of 12



£1.80



£3.20



£6.00

A pack of 4 batteries costs £1.80

A pack of 8 batteries costs £3.20

A pack of 12 batteries costs £6.00

Which pack gives the best value for money?

You must show how you get your answer.

$$\begin{array}{r} 0.45 \\ 4 \overline{) 1.80} \\ \hline \end{array}$$

45p

$$\begin{array}{r} 0.40 \\ 8 \overline{) 3.20} \\ \hline \end{array}$$

40p

$$\begin{array}{r} 0.50 \\ 12 \overline{) 6.00} \\ \hline \end{array}$$

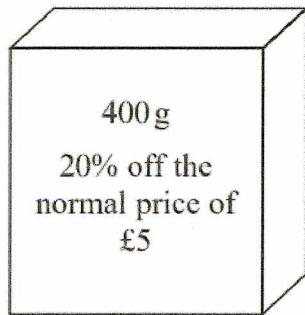
50p

The pack of 8 batteries will give the best value for money.

18 Food Mart and Jan's Store sell boxes of the same type of breakfast cereal.

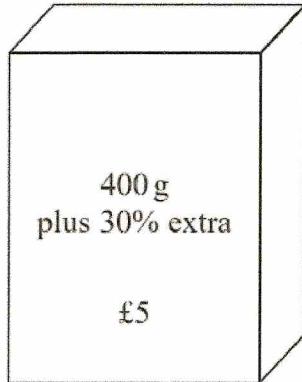
Each shop has a special offer.

Food Mart



$$10\% = 50p$$
$$20\% = £1$$

Jan's Store



$$10\% = 40g$$
$$30\% = 120g$$

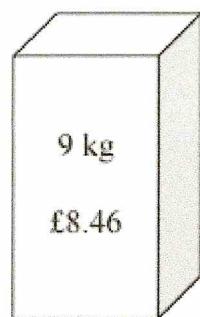
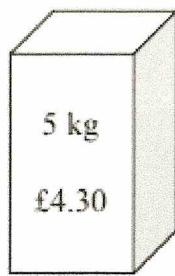
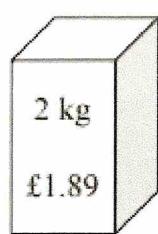
Which box of cereal is the better value for money?
You must show your working.

$$400g$$
$$20\% \text{ off } £5 = £4$$
$$400g = £4 \quad \left. \begin{array}{l} \\ \end{array} \right) \div 4$$
$$100g = £1$$

$$520g = £5$$
$$104g = £1 \quad \left. \begin{array}{l} \\ \end{array} \right) \div 5$$

Jan's store gives you more cereal per £1.

17 Soap powder is sold in three sizes of box.



A 2 kg box of soap powder costs £1.89

A 5 kg box of soap powder costs £4.30

A 9 kg box of soap powder costs £8.46

Which size of box of soap powder is the best value for money?

You must show how you get your answer.

$$2\text{kg} = \text{£1.89}$$

$$1\text{kg} = \text{£0.945}$$

$$5\text{kg} = \text{£4.30}$$

$$1\text{kg} = \text{£0.86}$$

$$9\text{kg} = \text{£8.46}$$

$$1\text{kg} = \text{£0.94}$$

The 5kg box is the best value for money.

22 Henry is thinking of having a water meter.

These are the two ways he can pay for the water he uses.

Water Meter

A charge of £28.20 per year

plus

91.22p for every cubic metre of water used

1 cubic metre = 1000 litres

No Water Meter

A charge of £107 per year

Henry uses an average of 180 litres of water each day.

Use this information to determine whether or not Henry should have a water meter.

$$180 \text{ litres} \times 365 \text{ days} = 65700 \text{ litres per year.}$$

$$\frac{65700}{1000} = 65.7 \text{ cubic metres}$$

$$65.7 \times 91.22p = 5993.154p$$

$$= £59.93$$

$$\begin{array}{r} + 28.20 \text{ charge} \\ \hline £88.13 \end{array}$$

Having a water meter would be cheaper than not having a water meter.

25 Jo is going to buy 15 rolls of wallpaper.

Here is some information about the cost of rolls of wallpaper from each of two shops.



Chic Decor

3 rolls for £36

Style Papers

Pack of 5 rolls
normal price £70

12% off the normal price

Jo wants to buy the 15 rolls of wallpaper as cheaply as possible.

Should Jo buy the wallpaper from Chic Decor or from Style Papers?
You must show how you get your answer.

$$3 \times 5 = 15 \text{ rolls}$$

$$\text{£}36 \times 5 = \underline{\text{£}180}$$

$$3 \times \text{£}70 = \text{£}210$$

$$\text{£}210 \times 0.88$$

$$= \underline{\text{£}184.80}$$

Chic Decor is cheaper than Style papers.