

Name

ANSWERS

Class



MATHS TEACHER HUB

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Exchange rates and conversions

(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.

12 Rehan is on holiday in the USA.

He has \$200 to spend on clothes.

Rehan buys

1 pair of trainers costing \$60

3 T-shirts costing \$25 each. $\rightarrow \$75$

He also wants to buy a jacket costing \$80

(a) Has Rehan got enough money to buy the jacket?

You must show how you get your answer.

$$\begin{array}{r} 60 \\ 75 \\ + 80 \\ \hline 215 \end{array}$$

No Rehan does not have enough
to buy the \$80 jacket.

(3)

The trainers cost \$60

The exchange rate is \$1 = £0.749

Rehan says,

"The trainers cost less than £40"

Rehan is wrong.

(b) Using a suitable approximation, show working to explain why.

$$60 \times 0.7 = 42$$

(2)

- 14 Andy went on holiday to Canada.
His flights cost a total of £1500



Andy stayed for 14 nights.
His hotel room cost \$196 per night.

Andy used wifi for 12 days.
Wifi cost \$5 per day.

The exchange rate was \$1.90 to £1

- (a) Work out the total cost of the flights, the hotel room and wifi.
Give your answer in pounds.

$$14 \times \$196 = \$2744$$

$$12 \times \$5 = \$60$$

$$\begin{array}{r} \$2744 \\ \$60 \\ \hline \$2804 \end{array} = £1475.79$$

$$+ £1500$$

£ : \$

$$\begin{array}{r} 1 : 1.90 \\ 2804 \end{array} \rightarrow \times 1475.789$$

$$£ \underline{2975.79} \quad (5)$$

- (b) If there were fewer dollars to £1, what effect would this have on the total cost, in pounds, of Andy's holiday?

It would cost more.

(1)

- 17 Blake works 32 hours a week in the UK.
She is paid £473.28 per week.



Blake applies for a job in Australia.
The rate of pay is 26.40 Australian dollars per hour.

£1 = 1.796 Australian dollars

Blake thinks the rate of pay in Australia is greater than the rate of pay in the UK.

Is Blake correct?

You must show how you get your answer.

$$\frac{£473.28}{32} = £14.79 \text{ per hour}$$

Blake is wrong

$$26.56 > 26.40$$

$$\begin{aligned} & £ : \text{AUD} \\ & 1 : 1.796 \\ \hookrightarrow & 14.79 = 26.56284 \end{aligned}$$

19 Asif is going on holiday to Turkey.

The exchange rate is £1 = 3.5601 lira.

Asif changes £550 to lira.

- (a) Work out how many lira he should get.
Give your answer to the nearest lira.

$$\begin{array}{r} \text{£ : Lira} \\ 1 : 3.5601 \\ \times 550 \\ \hline 550 : 1958.055 \end{array}$$

1958 lira
(2)

Asif sees a pair of shoes in Turkey.

The shoes cost 210 lira.

Asif does not have a calculator.

He uses £2 = 7 lira to work out the approximate cost of the shoes in pounds.

- (b) Use £2 = 7 lira to show that the approximate cost of the shoes is £60

$$\frac{210 \text{ lira}}{7 \text{ lira}} = 30$$

$$2 \times 30 = \text{£}60$$

(2)

- (c) Is using £2 = 7 lira instead of using £1 = 3.5601 lira a sensible start to Asif's method to work out the cost of the shoes in pounds?

You must give a reason for your answer.

Yes, £2 = 7 lira is very close to the actual exchange rate

(1)

20 Water flows through a pipe at a rate of 20 gallons per minute.

1 gallon = 4.55 litres.

Change 20 gallons per minute to litres per second.

Give your answer correct to 3 significant figures.



$$\begin{aligned} 4.55 \times 20 &= 91 \text{ litres per minute} \\ &\div 60 \\ &= 1.51\dot{6} \text{ litres per second} \end{aligned}$$

1.52 litres per second

Specimen 2 – Paper 2F

(Total for Question 20 is 2 marks)

- 20 In London, 1 litre of petrol costs 108.9p
In New York, 1 US gallon of petrol costs \$2.83

1 US gallon = 3.785 litres
£1 = \$1.46



In which city is petrol better value for money, London or New York?
You must show your working.

$$\frac{283}{1.46} = 193.8356 \text{ p per gallon}$$

$$\frac{193.8356}{3.785} = 51.21152 \text{ p per litre}$$

New york is better value for money.

21 Three companies sell the same type of furniture.



The price of the furniture from Pooles of London is £1480

The price of the furniture from Jardins of Paris is €1980

The price of the furniture from Outways of New York is \$2250

The exchange rates are

$$£1 = €1.34$$

$$£1 = \$1.52$$

Which company sells this furniture at the lowest price?

You must show how you get your answer.

Paris

$$£ : €$$

$$1 : 1.34$$

$$: 1980 \rightarrow \times 1477.61$$

$$\underline{\text{Paris} = £1477.61}$$

New York

$$£ : \$$$

$$1 : 1.52$$

$$2250 \rightarrow \times 1480.26$$

$$\underline{\text{New York} = £1480.26}$$

Jardins of Paris has the lowest price.

21 Liz goes on holiday to South Africa.

Liz wants to change £850 into South African rand.
She wants to get as many 200 rand notes as possible.

The exchange rate is £1 = 18.53 rand.

Work out the greatest number of 200 rand notes that Liz can get for £850

$$\begin{array}{l} \text{£ : Rand} \\ 1 : 18.53 \\ \times 850 \\ \hline 850 \end{array}$$

$$= \underline{15750.50 \text{ Rand}}$$

$$\div 200 = 78.7525$$

78

June 2019 – Paper 3F

(Total for Question 21 is 3 marks)

22 In October Sally drove 560 miles in her car.

The car travelled 34.5 miles for each gallon of petrol used.

Petrol cost £1.08 per litre.

1 gallon = 4.55 litres.

Work out the cost of the petrol the car used in October.

$$\frac{560 \text{ miles}}{34.5 \text{ miles}} = 16.2318 \text{ gallons}$$

$$16.2318 \times 4.55 = 73.855072 \text{ litres}$$

$$73.855072 \times 1.08 = 79.7634$$

£ 79.76

June 2019 – Paper 3F

(Total for Question 22 is 4 marks)

24 A water tank is empty.

Anil needs to fill the tank with 2400 litres of water.

Company A supplies water at a rate of 8 litres in 1 minute 40 seconds.

Company B supplies water at a rate of 2.2 gallons per minute.

1 gallon = 4.54 litres

Company A would take more time to fill the tank than Company B would take to fill the tank.

How much more time?

Give your answer in minutes correct to the nearest minute.

$\rightarrow 1 \text{ min } \frac{40}{60} \text{ seconds}$
 $= 1 \frac{2}{3} \text{ min}$
 $= \frac{5}{3} \text{ minutes}$



(A) $\frac{2400}{8} = 300 \text{ litres}$

$300 \times \frac{5}{3} = 500 \text{ minutes}$

(B) $\frac{2400}{4.54} = 528.6 \text{ gallons}$

$\frac{528.6}{2.2} = 240.28 \text{ mins}$

$500 \text{ mins} - 240.28 \text{ mins}$

$= 259.72 \text{ minutes}$

260 minutes

- 27 In Spain, Sam pays 27 euros for 18 litres of petrol.
In Wales, Leo pays £40.80 for 8 gallons of the same type of petrol.



1 euro = £0.85
4.5 litres = 1 gallon

Sam thinks that petrol is cheaper in Spain than in Wales.

Is Sam correct?

You must show how you get your answer.

Spain € : £

$$\begin{array}{l} 1 : 0.85 \\ \times 27 \swarrow \\ 27 : \underline{\underline{22.95}} \text{ for 18 litres} \end{array}$$

$$\frac{22.95}{18} = \text{£}1.275 \text{ per litre}$$

Wales

$$8 \text{ gallons} \times 4.5 = 36 \text{ litres}$$

$$\text{£}40.80 = 36 \text{ litres}$$

$$\text{£}1.13 = 1 \text{ litre}$$

Sam is wrong, petrol is cheaper in Wales

$$\begin{array}{cc} \text{Spain} & \text{Wales} \\ \text{£}1.28 & > \text{£}1.13 \end{array}$$