

GCSE (9–1) Mathematics J560/01 Paper 1 (Foundation Tier)

Practice Paper – Set 3 Time allowed: 1 hour 30 minutes



You may use:

- A scientific or graphical calculator
- Geometrical instruments
- Tracing paper



First name										
Last name										
Centre number						Candidate number				

INSTRUCTIONS






- Use black ink. You may use an HB pencil for graphs and diagrams.
- Complete the boxes above with your name, centre number and candidate number.
- Answer **all** the questions.
- Read each question carefully before you start your answer.
- Where appropriate, your answers should be supported with working. Marks may be given for a correct method even if the answer is incorrect.
- Write your answer to each question in the space provided.
- Additional paper may be used if required but you must clearly show your candidate number, centre number and question number(s).
- Do **not** write in the barcodes.

INFORMATION

- The total mark for this paper is **100**.
- The marks for each question are shown in brackets [].
- Use the π button on your calculator or take π to be 3.142 unless the question says otherwise.
- This document consists of **20** pages.

Answer **all** the questions.

- 1 Charlie asked some people about their favourite type of food. The pictogram shows some of her results.

Burger	
Chinese	
Pizza	
Curry	
Fish and chips	
Other	

Key:  represents 2 people.

- (a) How many people answered Other?

(a) [1]

- (b) How many **more** people answered Chinese than Pizza?

(b) [1]

- (c) In total 50 people gave answers to Charlie.

Complete the pictogram for fish and chips.

[3]

2 (a) Sketch the quadrilateral described below.

- Opposite angles are equal.
- Opposite sides are equal.
- Opposite sides are parallel.
- Diagonals are not equal.

[1]

(b) Write down the name of the quadrilateral.

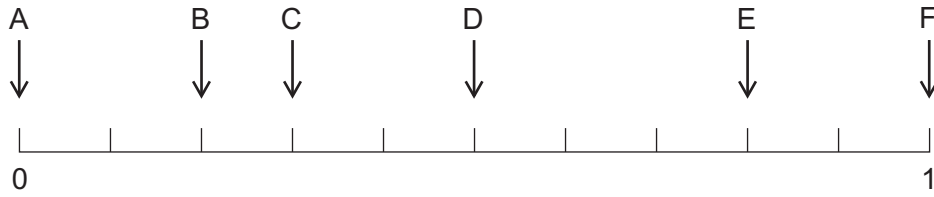
(b) [1]

3 Write the following numbers in order of size, smallest first.

8.104 8.4 8.14 80.01 8.041

..... [2]
smallest

- 4 Robert has a bag containing ten sweets.
4 are red, 3 are green, 2 are yellow and 1 is orange.
Robert takes a sweet from the bag without looking.



- (a) Which arrow shows the probability he takes a sweet which is

(i) green,

(a)(i) [1]

(ii) blue?

(ii) [1]

- (b) Work out the probability that Robert takes a sweet that is **not** orange.

(b) [2]

5 (a) Simplify.

(i) $t - 3t + 7t$

(a)(i) [1]

(ii) $-5x + 4y + 3x - y$

(ii) [2]

(b) Solve.

(i) $4h = 68$

(b)(i) $h =$ [1]

(ii) $94 = 4 + 7.5x$

(ii) $x =$ [2]

(iii) $2x > 7$

(iii) [1]

(c) Factorise fully.

$$2x^2 + 4x$$

(c) [2]

6 Here is a list of numbers.

24 25 26 27 28 29 30 31

From this list, write down

(a) a multiple of 7,

(a) [1]

(b) a cube number,

(b) [1]

(c) a prime number.

(c) [1]

7 (a) Write the following ratios in their simplest form.

(i) 6 : 8

(a)(i) : [1]

(ii) 600 m : 1.5 km

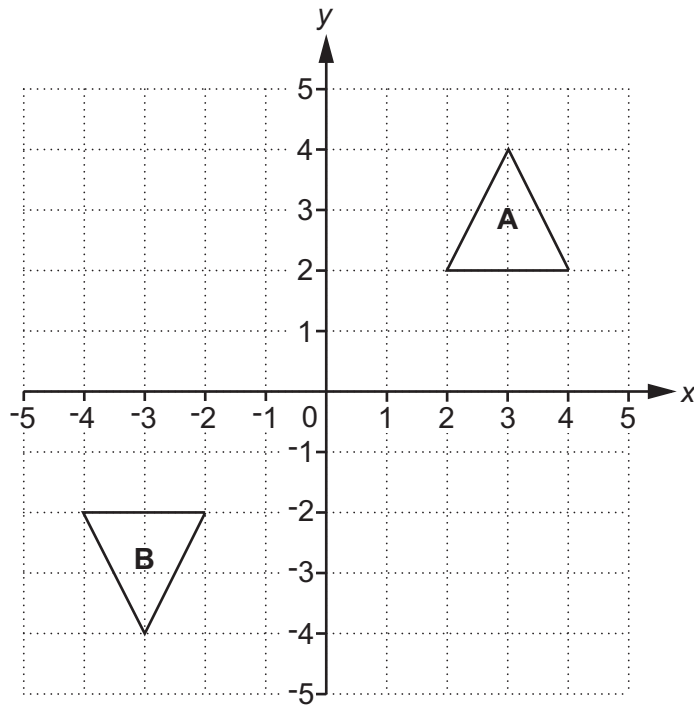
(ii) : [3]

(b) 64 pens cost £5.76.

How much would 80 of these pens cost?

(b) £ [2]

8 The diagram shows two triangles on a square grid.



(a) Reflect triangle **A** in the line $y = 0$. [2]

(b) Describe fully the **single** transformation that maps triangle **A** onto triangle **B**.

.....

..... [3]

9 To knit a jumper 26 balls of 50 grams of wool are needed.
A shop only sells balls of 400 grams of wool.

How many balls of 400 grams of wool are needed?

..... [3]

10 (a) Put brackets into these calculations so that the answer is correct.

(i) $70 - 25 \div 9 \times 3 = 15$ [1]

(ii) $6 \times 8 - 5 + 14 = 32$ [1]

(b) Calculate.

$$\frac{46.3 + 89.4}{15 - 3.1^2}$$

Give your answer correct to 3 significant figures.

(b) [2]

(c) Work out.

$$\frac{5}{8} \text{ of } 90$$

(c) [2]

(d) Write 0.000083 in standard form.

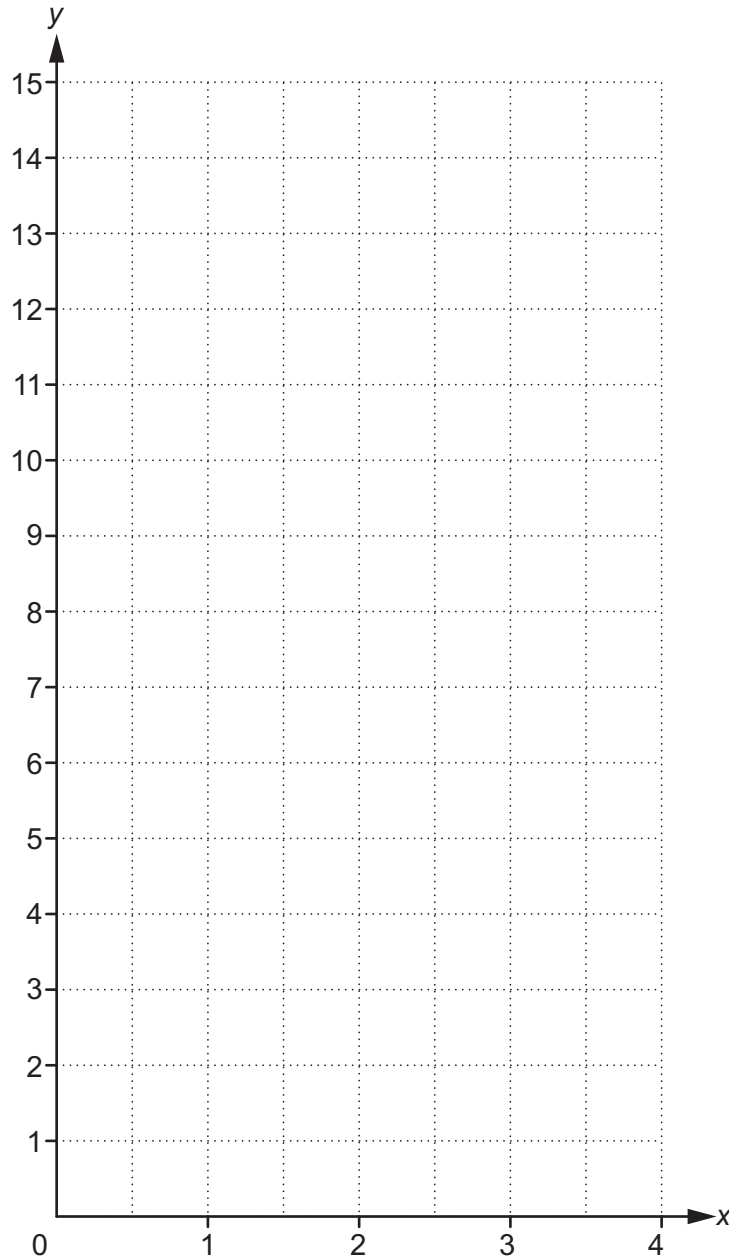
(d) [1]

11 (a) Complete this table for $y = 3x + 2$.

x	0	1	2	3	4
y	2		8		14

[1]

(b) On the grid below, draw the graph of $y = 3x + 2$ for values of x from 0 to 4.



[2]

(c) Write down an equation for a line parallel to the line $y = 3x + 2$.

(c) [1]

12 John mixes sand and cement in the ratio 3 : 1.
He needs 900 kg of the mix.

A 135 kg bag of sand costs £8.64.

A 25 kg bag of cement costs £6.59.

Calculate how much it will cost John to make the mix.

£ [6]

13 The table below shows the weight loss, w kg, of 50 members of a slimming club.

Weight loss (kg)	Frequency		
$0 < w \leq 5$	4		
$5 < w \leq 10$	19		
$10 < w \leq 15$	14		
$15 < w \leq 20$	11		
$20 < w \leq 25$	2		

(a) Calculate an estimate of the mean of this data.

(a) kg **[4]**

(b) Explain why your answer is an estimate.

.....
 **[1]**

14 An alloy is made from 28 cm^3 of copper and 41 cm^3 of gold.

The density of copper is 9 g/cm^3 .

The density of gold is 19 g/cm^3 .

(a) Work out the mass of copper used.

(a) g [2]

(b) Work out the density of the alloy.

(b) g/cm^3 [4]

15 A railway station has two platforms.
Trains stop at the northbound platform every 15 minutes.
Trains stop at the southbound platform every 18 minutes.

Two trains stopped together at 15 12.

(a) Work out the next time two trains stop together at this station.

(a) [4]

(b) Write down two assumptions that were necessary to solve this problem.

1

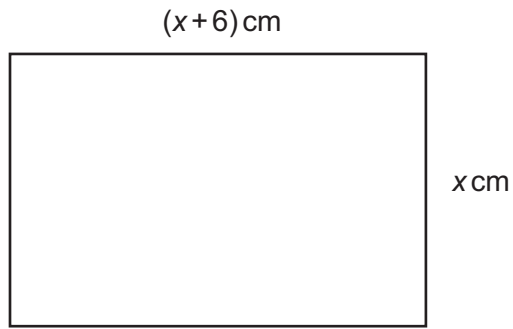
.....

2

.....

[2]

- 16 A rectangle has length $(x + 6)$ cm and width x cm.



Not to scale

The perimeter of the rectangle is 40 cm.

- (a) Show that $x = 7$.

[3]

- (b) Calculate the length of the diagonal of the rectangle.

..... cm [4]

17 Ella bought a ring for £3000.
The value of the ring increased by 4% for **each** of the next 3 years.

(a) Show that the value of the ring after 3 years is £3375, correct to the nearest pound.

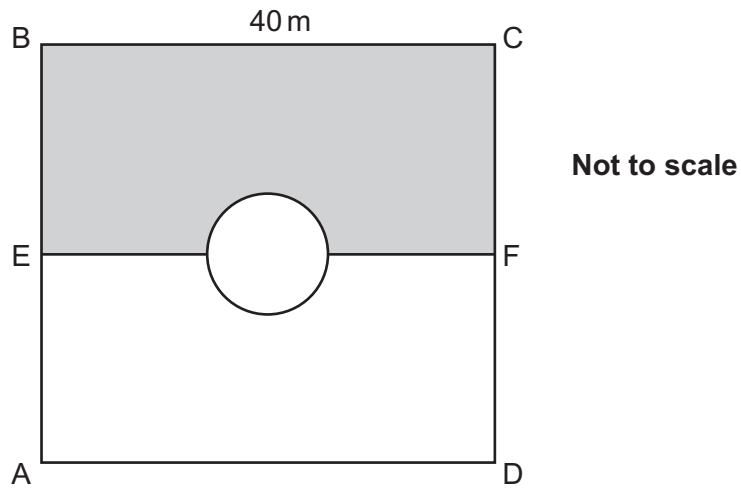
[3]

(b) After 3 years, Ella sold the ring for £3375.

Calculate her overall percentage profit.

(b) % [3]

- 18 The diagram shows all the paths in a park.
 ABCD is a square of side 40 metres.
 E is the midpoint of AB. F is the midpoint of CD.
 The circular path is in the centre of the square and has radius 5 metres.



- (a) Work out the percentage of the square ABCD that is shaded.

(a) % [6]

- (b) Work out the shortest distance from E to F across the park, using only the paths shown.

(b) m [4]

- 19 In a class of 34 students
- 12 study German
 - 25 study Spanish
 - 6 do not study either language.

One student in the class is selected at random.

Find the probability that this student studies **both** languages.

..... [4]

END OF QUESTION PAPER

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