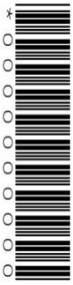


## GCSE (9–1) Mathematics

### J560/01 Paper 1 (Foundation Tier)

## Practice paper – Set 2

### Time allowed: 1 hours 30 minutes



**You may use:**

- a scientific or graphical calculator
- geometrical instruments
- tracing paper

|                      |  |  |  |  |  |  |                         |  |  |  |  |
|----------------------|--|--|--|--|--|--|-------------------------|--|--|--|--|
| <b>First name</b>    |  |  |  |  |  |  |                         |  |  |  |  |
| <b>Last name</b>     |  |  |  |  |  |  |                         |  |  |  |  |
| <b>Centre number</b> |  |  |  |  |  |  | <b>Candidate number</b> |  |  |  |  |

### INSTRUCTIONS

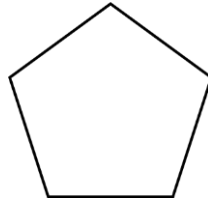
- Use black ink. You may use an HB pencil for graphs and diagrams.
- Complete the boxes above with your name, centre number and candidate number.
- Answer **all** the questions.
- Read each question carefully before you start to write your answer.
- Where appropriate, your answers should be supported 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  $\pi$  button on your calculator or take  $\pi$  to be 3.142 unless the question says otherwise.
- This document consists of **22** pages.

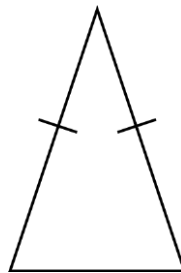
Answer **all** the questions.

1 (a) Write down the mathematical name for this shape.



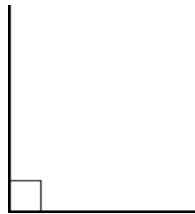
(a).....[1]

(b) Write down the mathematical name of this triangle.



(b).....[1]

(c) Write down the mathematical name of this angle.



(c).....[1]

2 Write down

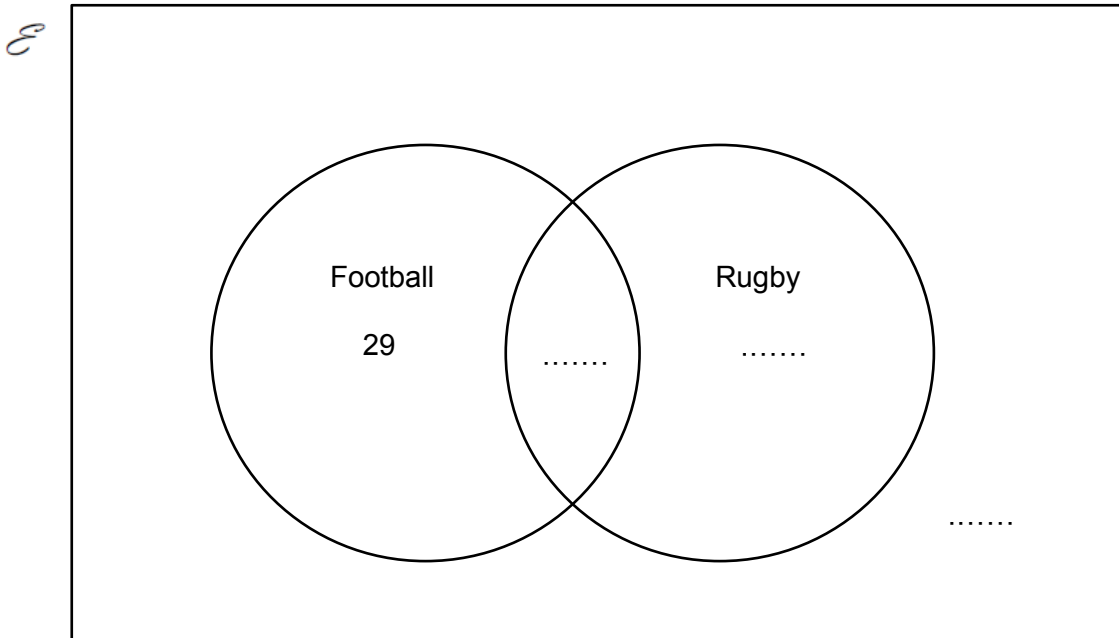
(a) a multiple of 12,

(a).....[1]

(b) a square number between 20 and 40.

(b).....[1]

3 Here is a Venn diagram.



80 people were asked if they watch football or rugby.

- 29 said they watch football, but not rugby.
- 65 said they watch football.
- 47 said they watch rugby.

(a) Complete the Venn diagram.

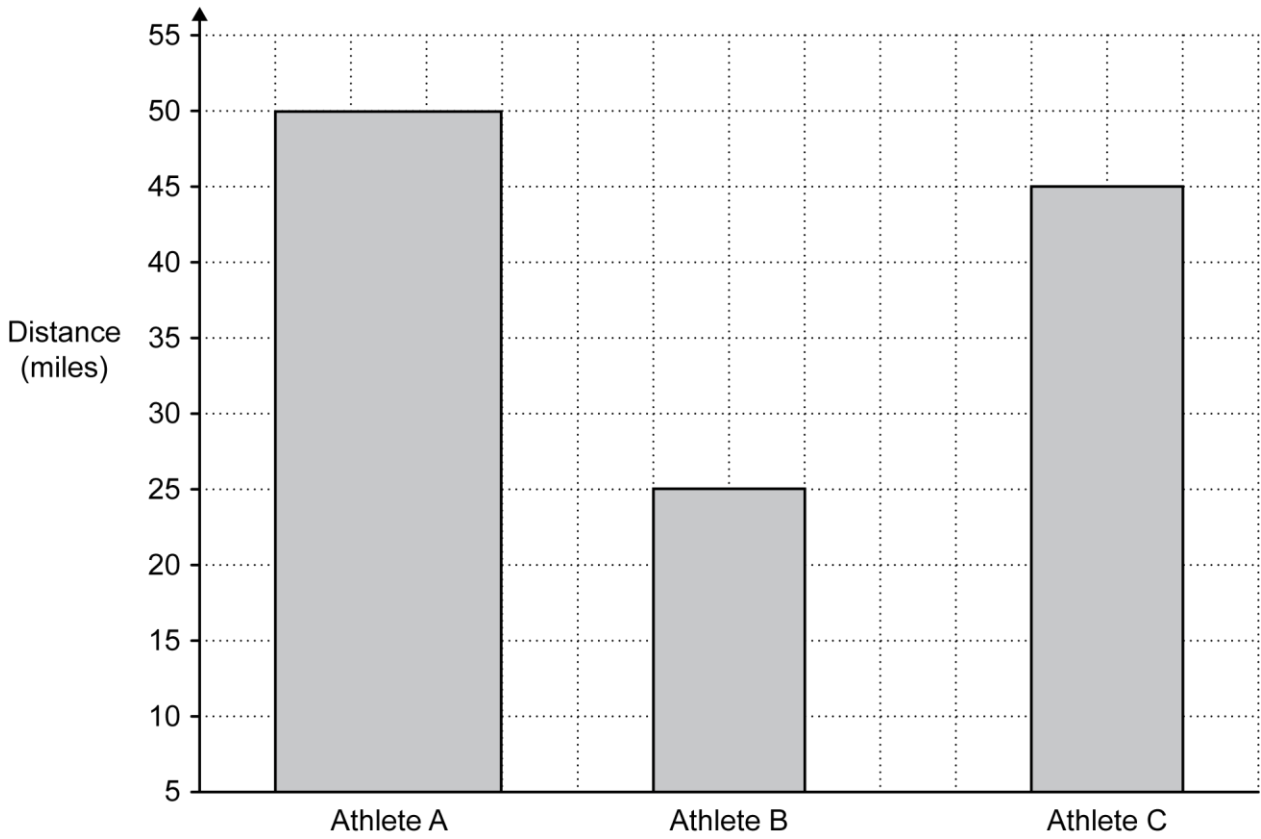
[3]

(b) What percentage of the people asked do **not** watch football or rugby?

(b).....% [2]

4 This bar chart shows the number of miles run by three athletes in a week.

**Graph to show number of miles run**



Give **two** reasons why the bar chart is misleading.

Reason 1 .....

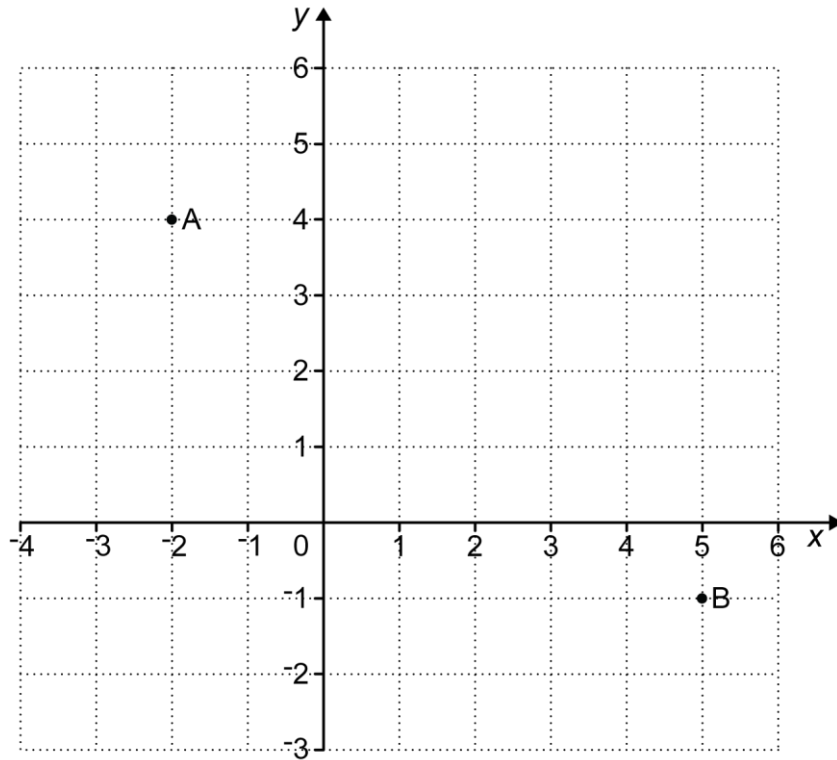
.....

Reason 2 .....

.....

**[2]**

5 Points A and B are shown on this grid.



(a) (i) Write down the coordinates of point A.

(a)(i) (....., .....) [1]

(ii) Write down the coordinates of point B.

(ii) (....., .....) [1]

(b) Plot point C at (-1, -2).

[1]

6 Here is a recipe for curry.

| Curry<br>For 4 people |              |
|-----------------------|--------------|
| 400 g                 | meat         |
| 2                     | onions       |
| 3                     | carrots      |
| 200 g                 | sweetcorn    |
| 500 ml                | stock        |
| 10 g                  | curry powder |

(a) Oliver is making this curry for 8 people.

How many carrots should he use?

(a)..... [1]

(b) Jen is making this curry for 2 people.

How much curry powder should she use?

(b)..... g [1]

(c) Andy is making this curry using 1000 g of meat.

For how many people did he make the curry?

(c)..... [2]

7 (a) Simplify.

(i)  $8r - 7t - 5r + 3t$

(a)(i) ..... [2]

(ii)  $b \times b \times b \times b$

(ii) ..... [1]

(b) Solve.

(i)  $8a = 54$

(b)(i)  $a =$  ..... [1]

(ii)  $11c + 20 = 53$

(ii)  $c =$  ..... [2]

(c) Multiply out.

$4(x - 5)$

(c) ..... [1]

(d) Multiply out and simplify.

$(2x + 5)(x - 3)$

(d) ..... [2]

- 8 Milo does this calculation.

$$5 + 2 \times 3 = 21$$

Explain what Milo has done wrong.

..... [1]

- 9 Abdul drives 105 miles at an average speed of 70 miles per hour.  
He then drives 100 miles at an average speed of 40 miles per hour.

Calculate his average speed for the whole journey.

..... mph [5]



10 (a) Write  $\frac{16}{112}$  in its lowest terms.

(a).....[1]

(b) Boris wins £5000.

He gives  $\frac{1}{5}$  of the money to his wife.

He gives 30% of the remaining money to his children.

What percentage of the **original** amount does Boris have left?

(b)..... % [5]

11 Chris is organising a wedding.

- (a) The wedding breakfast is in a hotel.  
It costs £400 to hire the room plus £69.95 for each guest.  
He can spend a maximum of £5500.

What is the maximum number of guests he can invite to the breakfast?

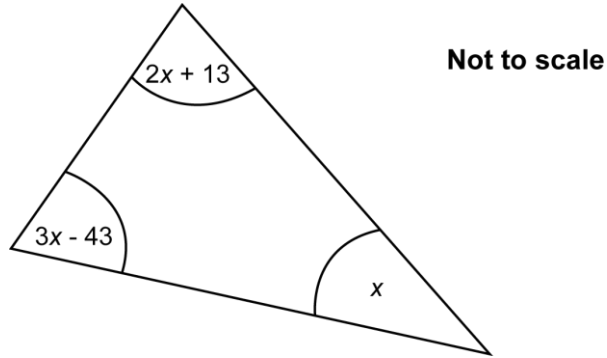
(a).....[3]

- (b) There are 120 people in the evening.  
A buffet is ordered for 85% of these people.

For how many people is the buffet ordered?

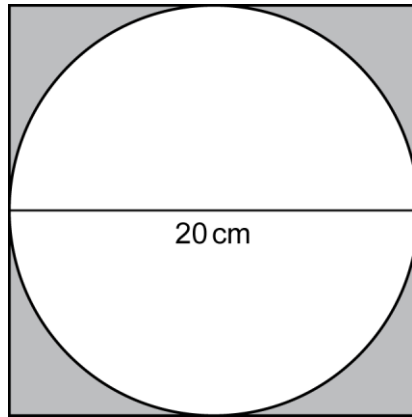
(b).....[2]

12 Calculate the size of each angle of this triangle.



.....°; .....°; .....° [5]

- 13 A circle, diameter 20 cm, is drawn inside a square. The four sides of the square touch the circle.



Not to scale

What percentage of the square is shaded?

.....% [5]

- 14 The table below shows an estimate of the population of some countries.

| Country  | Population         |
|----------|--------------------|
| Ecuador  | $1.60 \times 10^7$ |
| Germany  | $8.12 \times 10^7$ |
| Italy    | $6.07 \times 10^7$ |
| Japan    | $1.27 \times 10^8$ |
| Slovenia | $2.06 \times 10^6$ |

- (a) Which country has the largest population?

(a) ..... [1]

- (b) Write the population of Italy as an ordinary number.

(b) ..... [1]

- (c) The population of Montserrat is 5000.

Write 5000 in standard form.

(c) ..... [1]

- (d) Complete the following sentence.

The population of ..... is about 5 times the population of .....

[2]

15 (a) Write 54 as the product of its prime factors.

(a).....[2]

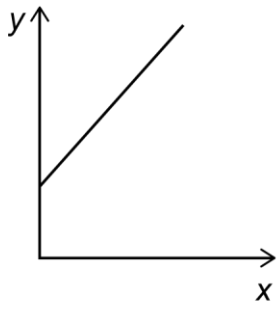
(b) Katy fills some gift boxes.  
Each gift box will contain one toy and one keyring.  
Katy buys toys in bags of 8.  
Katy buys keyrings in bags of 14.

She wants to use all the toys and all the keyrings she buys.

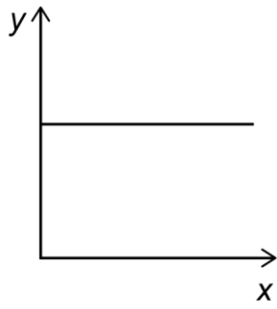
What is the smallest number of gift boxes Katy can fill?

(b).....gift boxes [4]

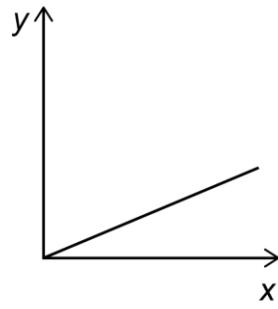
16 (a) Which graph shows that  $y$  is directly proportional to  $x$ ?



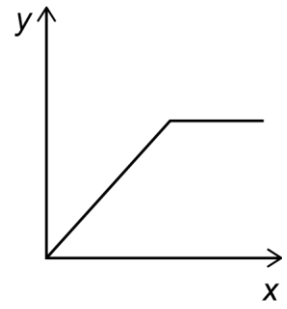
A



B



C



D

(a).....[1]

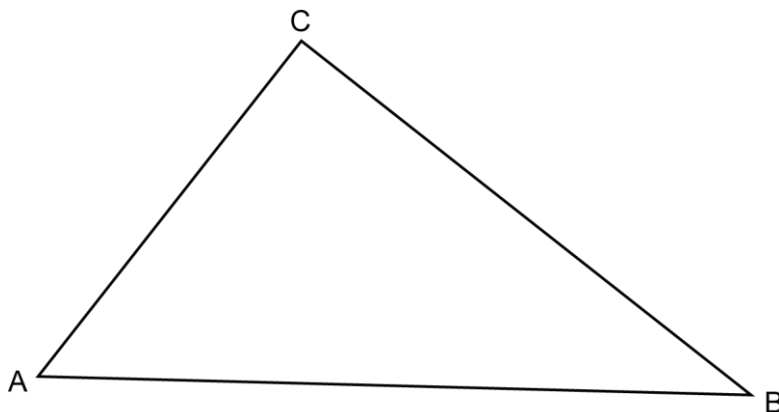
(b) In this table  $y$  is directly proportional to  $x$ .

|     |    |     |
|-----|----|-----|
| $x$ | 16 | 24  |
| $y$ | 36 | $b$ |

Calculate  $b$ .

(b).....[2]

17 (a) Triangle ABC is shown below.



Construct and shade the region within this triangle that is

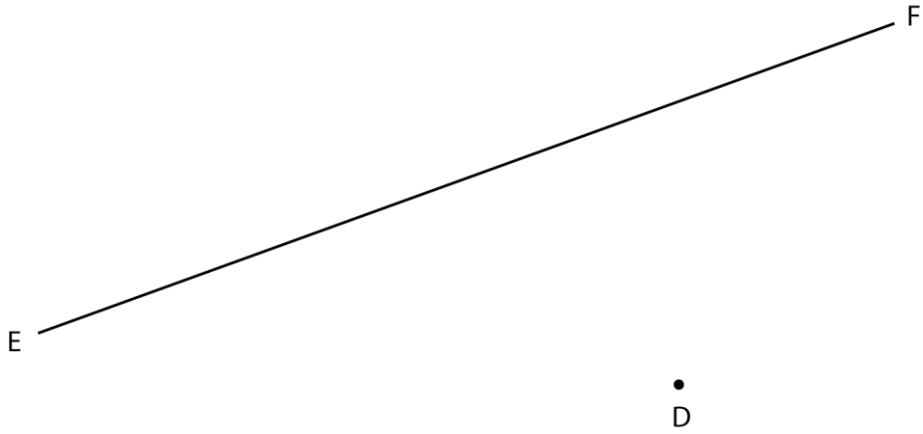
- nearer to A than to B
- less than 3 cm from C.

Show all your construction lines.

[5]

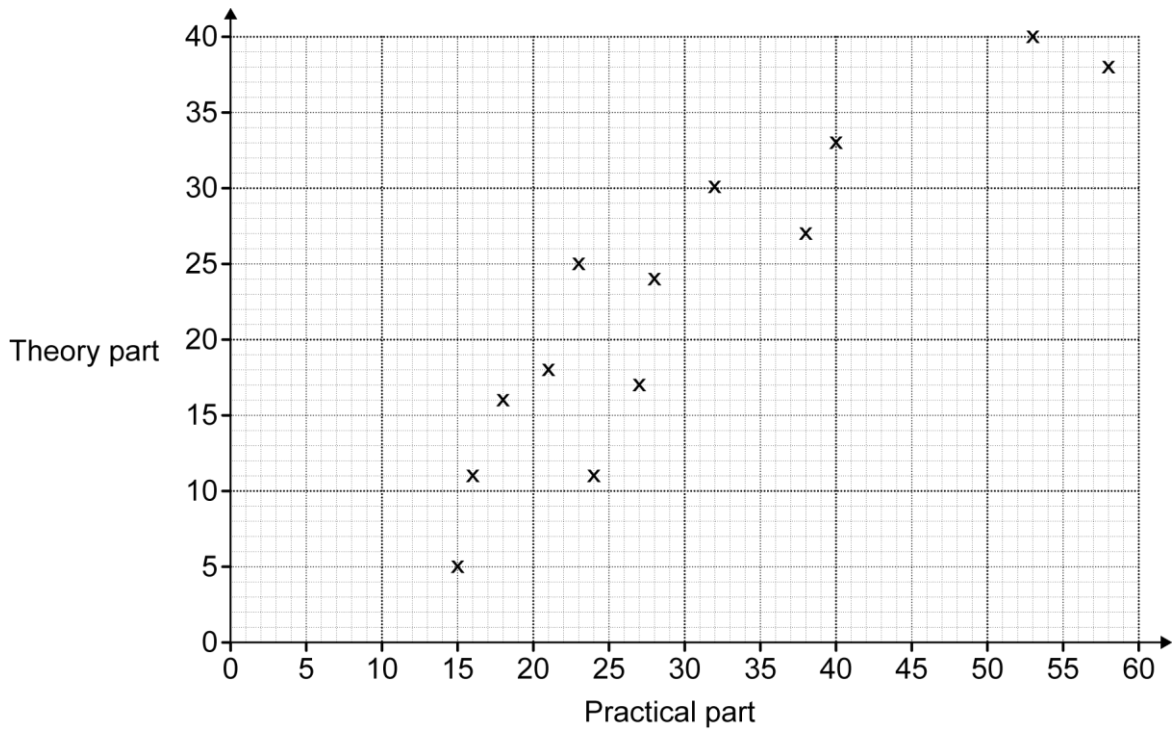


- (b) Find, by construction, the shortest distance from D to the line EF.  
Show all your construction lines.



(b) Shortest distance = ..... cm [3]

18 The scatter diagram shows the results for 13 students in the practical part and the theory part of a test.



(a) The table below shows the results for two more students.

|                |    |    |
|----------------|----|----|
| Practical part | 50 | 33 |
| Theory part    | 34 | 28 |

Plot these two results on the scatter diagram.

[1]

(b) The pass marks for the test are 40 in the practical part and 30 in the theory part.

What percentage of the 15 students passed both parts?  
Write your answer correct to the nearest whole number.

(b).....% [4]

(c) (i) Draw a line of best fit on the scatter diagram. [1]

(ii) Hannah scored 48 in the practical part, but missed the theory part.

Estimate a score for Hannah in the theory part.

(c)(ii)..... [1]

(iii) Explain why your answer to part (ii) may not be correct.

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

19 Three apples and two bananas cost 75p.  
Four apples and one banana cost 80p.

Find the price of one apple and the price of one banana.

Apple =..... p

Banana =..... p  
[4]

20 A pattern of six coloured tiles is shown below.

|      |      |      |
|------|------|------|
| Red  | Red  | Blue |
| Grey | Blue | Blue |

Each tile is a square of side 10 cm.

(a) Ngaio has a rectangular wall, 2.4 m high and 2.7 m long. She wants to repeat this pattern over her wall.

How many tiles of each colour does she need?

(a) ..... red tiles  
 ..... blue tiles  
 ..... grey tiles  
**[4]**

(b) Geoff has a rectangular wall, 2.4 m high and 3.7 m long. He wants to use the same pattern.

Geoff says

I cannot use whole patterns to completely cover my wall.

Explain why Geoff is correct.

.....  
 ..... **[2]**

21 The table below shows the number of texts Natalie sent each day over a period of 75 days.

| Number of texts | Frequency |  |  |
|-----------------|-----------|--|--|
| 0 – 4           | 12        |  |  |
| 5 – 9           | 15        |  |  |
| 10 – 14         | 8         |  |  |
| 15 – 19         | 24        |  |  |
| 20 – 24         | 16        |  |  |

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

(a).....[4]

(b) Explain why your answer is an estimate.

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

**END OF QUESTION PAPER**

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