Name ..... Class .....

Non-Calculator Crossover Paper 5

GCSE Mathematics · Foundation and Higher

40 marks · 45 minutes · Non-Calculator

1 (a) Write down the value of 9^0

..... **(1)**

(b) Write down the value of 5^{-2}

..... **(1)**

(c) $2^n = \frac{1}{16}$

Find the value of n.

$n =$ ..... **(1)**

[Question 1: 3 marks]

2 A florist has 72 red roses and 90 white roses.

She uses all of the roses to make identical bunches.

Each bunch has the same number of red roses and the same number of white roses.

What is the greatest number of bunches she can make?

..... **(2)**

[Question 2: 2 marks]

3 The table gives information about the distances, d km, that 25 people travel to work.

Distance (d km)	Frequency
$0 < d \leq 10$	4
$10 < d \leq 20$	10
$20 < d \leq 30$	8
$30 < d \leq 40$	3

(a) Write down the modal class.

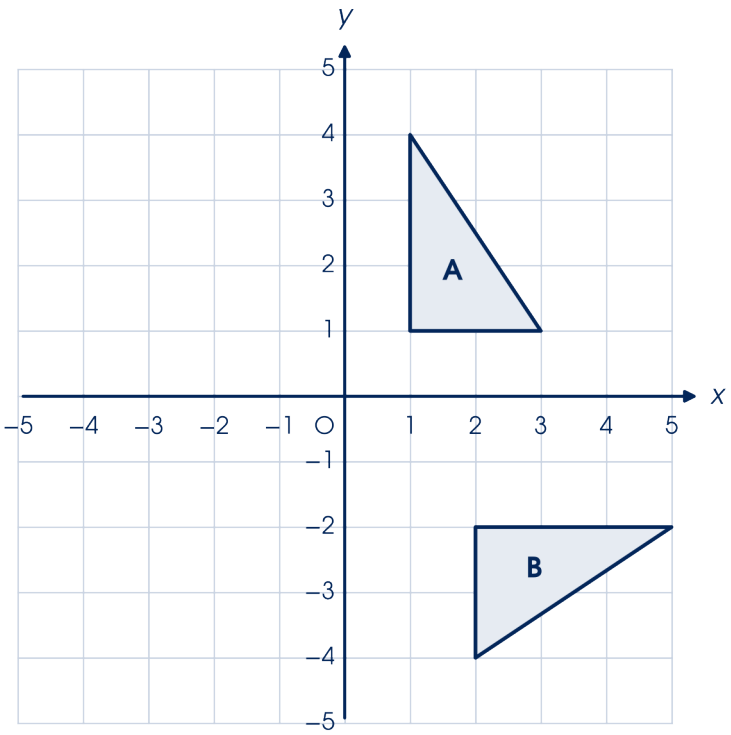
..... **(1)**

(b) Work out an estimate for the mean distance.

..... km **(3)**

[Question 3: 4 marks]

4 Triangle **A** and triangle **B** are drawn on the grid.



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

.....

..... **(3)**

[Question 4: 3 marks]

5 Two drama clubs were asked if they would perform in a summer show.

At the Tuesday club, 18 out of 25 members said yes.

At the Thursday club, 26 out of 40 members said yes.

Which club had the greater percentage of members who said yes?

You must show your working.

..... **(3)**

[Question 5: 3 marks]

6 (a) Write down the inequality shown on the number line.



..... **(1)**

(b) On the number line below, show the inequality $-1 \leq x < 4$



(2)

[Question 6: 3 marks]

7 Priya wants to find out how students at her school travel to school.

She asks the first 30 students who arrive at school by bus.

(a) Give one reason why this sample may be biased.

.....

..... **(1)**

(b) Suggest one way that Priya could improve her sample.

.....

..... **(1)**

[Question 7: 2 marks]

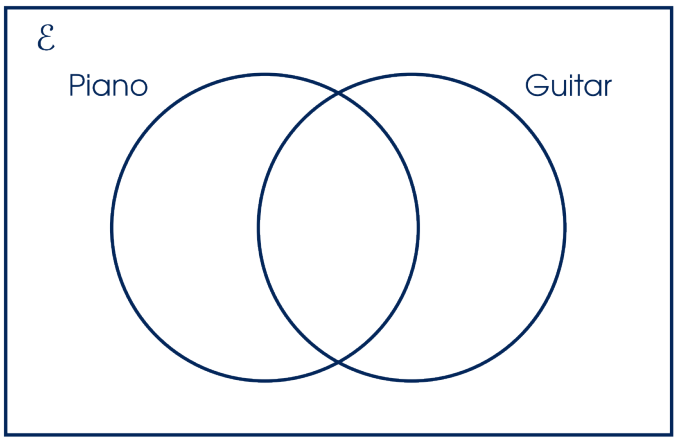
8 There are 40 students in a music class.

23 of the students play the piano.

15 of the students play the guitar.

6 of the students play neither the piano nor the guitar.

(a) Complete the Venn diagram to show this information.



(3)

(b) One of the students is chosen at random.

Find the probability that this student plays the guitar but not the piano.

..... **(1)**

[Question 8: 4 marks]

9 *ABC* is an isosceles triangle with *AB* = *AC*.

BAD is a straight line.

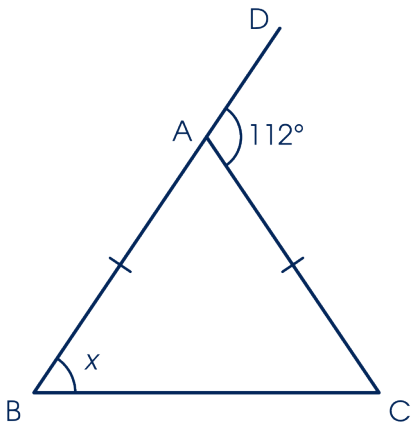


Diagram NOT accurately drawn

Angle *DAC* = 112°.

Work out the size of angle *ABC*, marked *x*.

Give a reason for each stage of your working.

..... ° **(3)**

[Question 9: 3 marks]

10 The diagram shows a rectangle.



Diagram NOT accurately drawn

The perimeter of the rectangle is 44 cm.

Work out the area of the rectangle.

..... cm^2 **(4)**

[Question 10: 4 marks]

11 (a) Write 72 000 000 in standard form.

..... **(1)**

(b) Work out $(4 \times 10^3)^2$

Give your answer in standard form.

..... **(2)**

[Question 11: 3 marks]

12 A bag contains only red counters and blue counters.

The ratio of the number of red counters to the number of blue counters is 4 : 7

Leo puts 15 more red counters into the bag.

There are now the same number of red counters and blue counters in the bag.

How many blue counters are in the bag?

..... **(3)**

[Question 12: 3 marks]

13 (a) Write down the gradient of the line with equation $y = 3x + 1$

..... **(1)**

(b) Line **L** is parallel to the line with equation $y = 3x + 1$

Line **L** passes through the point (4, 5).

Find an equation for line **L**.

..... **(2)**

[Question 13: 3 marks]

TOTAL FOR PAPER IS 40 MARKS