

Name: _____

Maths Genie Stage 9

Test D

Instructions

- Use **black** ink or ball-point pen.
- 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.**
- **Calculators may not be used.**



Information

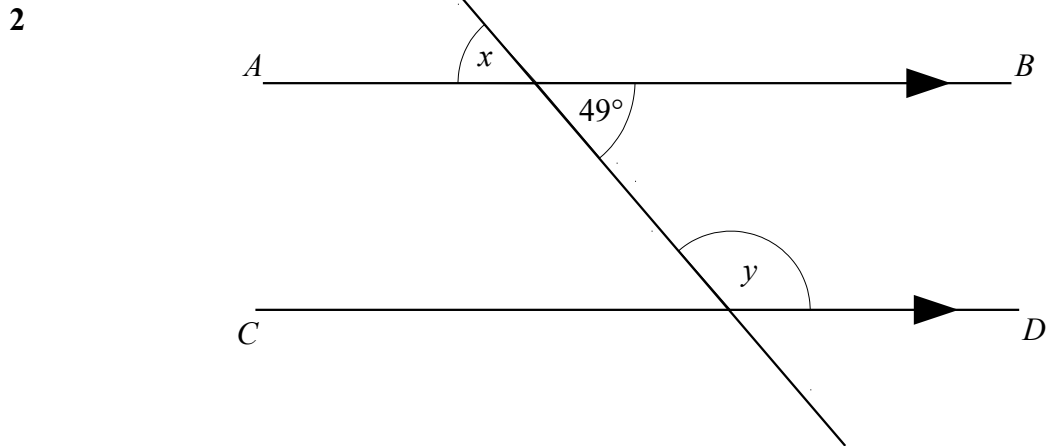
- The marks for each question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

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

- 1 A line passes through the point $(0, 7)$.
The gradient of this line is 5.
Write down the equation of this line.

.....
(Total for Question 1 is 2 marks)



AB and CD are parallel lines.

(a) Write down the size of angle x .
.....^o

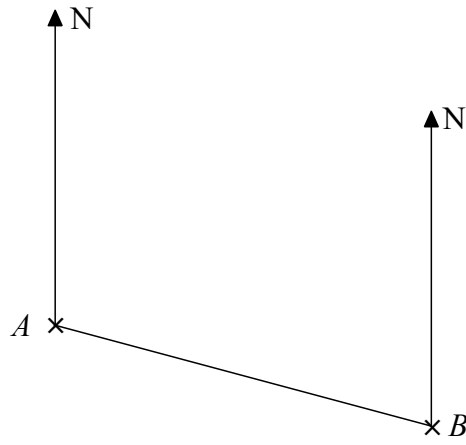
(b) Give a reason for your answer.
.....
.....
(1)

(c) Write down the size of angle y .
.....^o

(d) Give a reason for your answer.
.....
.....
(1)

.....
(Total for Question 2 is 2 marks)

3



(a) Measure the bearing of B from A .

°

.....
(1)

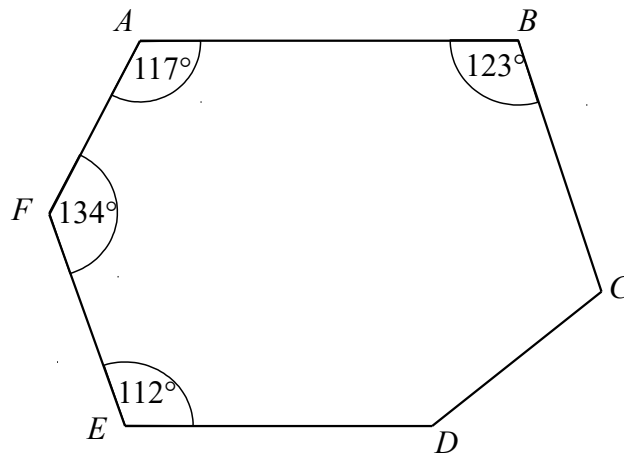
(b) Measure the bearing of A from B .

°

.....
(1)

(Total for Question 3 is 2 marks)

4



$ABCDEF$ is a hexagon.

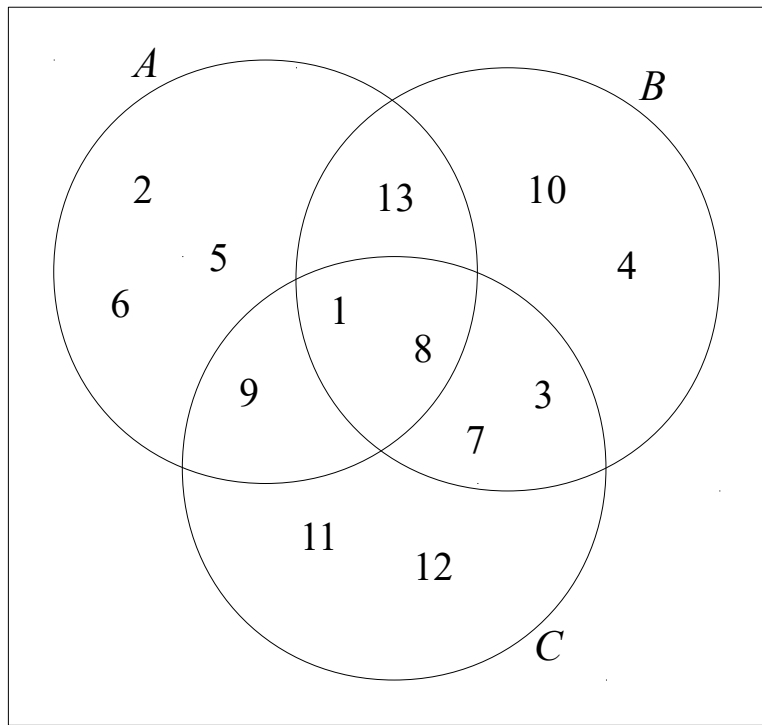
Angle $CDE = 2 \times$ Angle BCD

Work out the size of angle CDE .

.....°

(Total for Question 8 is 4 marks)

6 Here is a Venn diagram.



(a) List the members of $A \cap B$

..... (1)

A number is chosen at random from \mathcal{E} .

(b) Find $P(B \cup C)$

..... (2)

(Total for Question 6 is 3 marks)

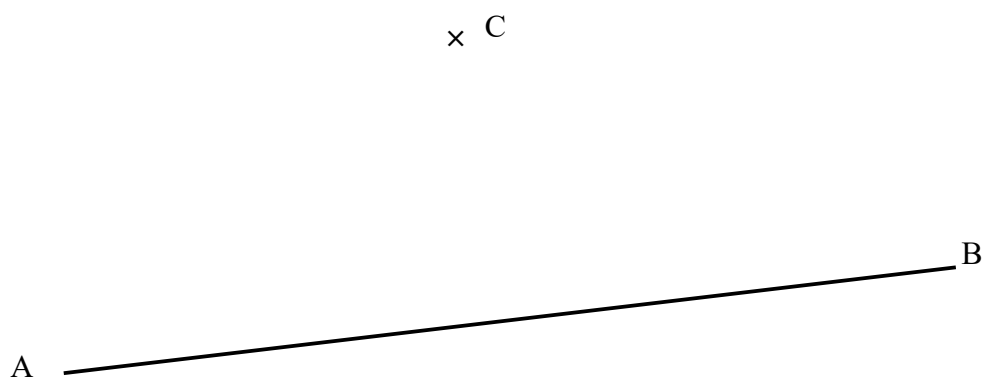
7 Find the gradient of the line that passes through (6, -4) and (1, 9).

.....
(Total for Question 7 is 2 marks)

8 Make a the subject of $v = u + at$

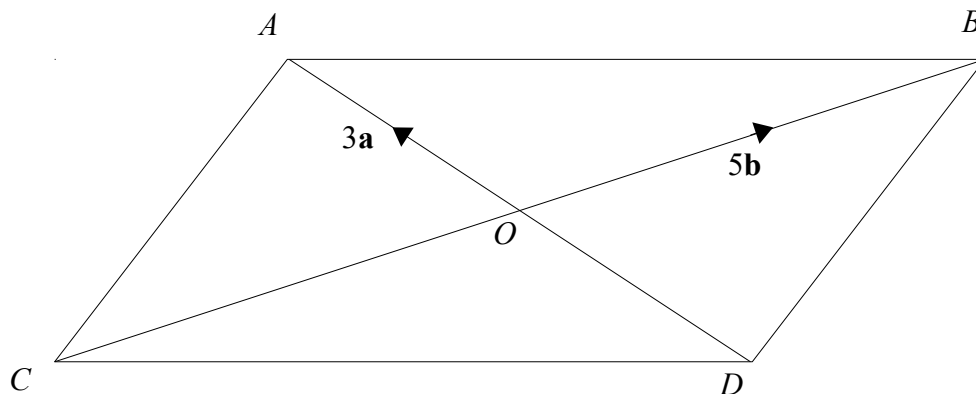
.....
(Total for Question 8 is 2 marks)

9 Use ruler and compasses to construct the perpendicular from point C to the line AB.
You must show all your construction lines.



(Total for Question 9 is 2 marks)

10 The diagram shows a parallelogram.



$$\vec{OA} = 3a$$

$$\vec{OB} = 5b$$

(a) Find, in terms of a , the vector \vec{DA}

.....
(1)

(b) Find, in terms of a and b , the vector \vec{AB}

.....
(1)

(c) Find, in terms of a and b , the vector \vec{AC}

.....
(1)

(Total for Question 10 is 3 marks)
