

Name: _____

Maths Genie Stage 6

Test A

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

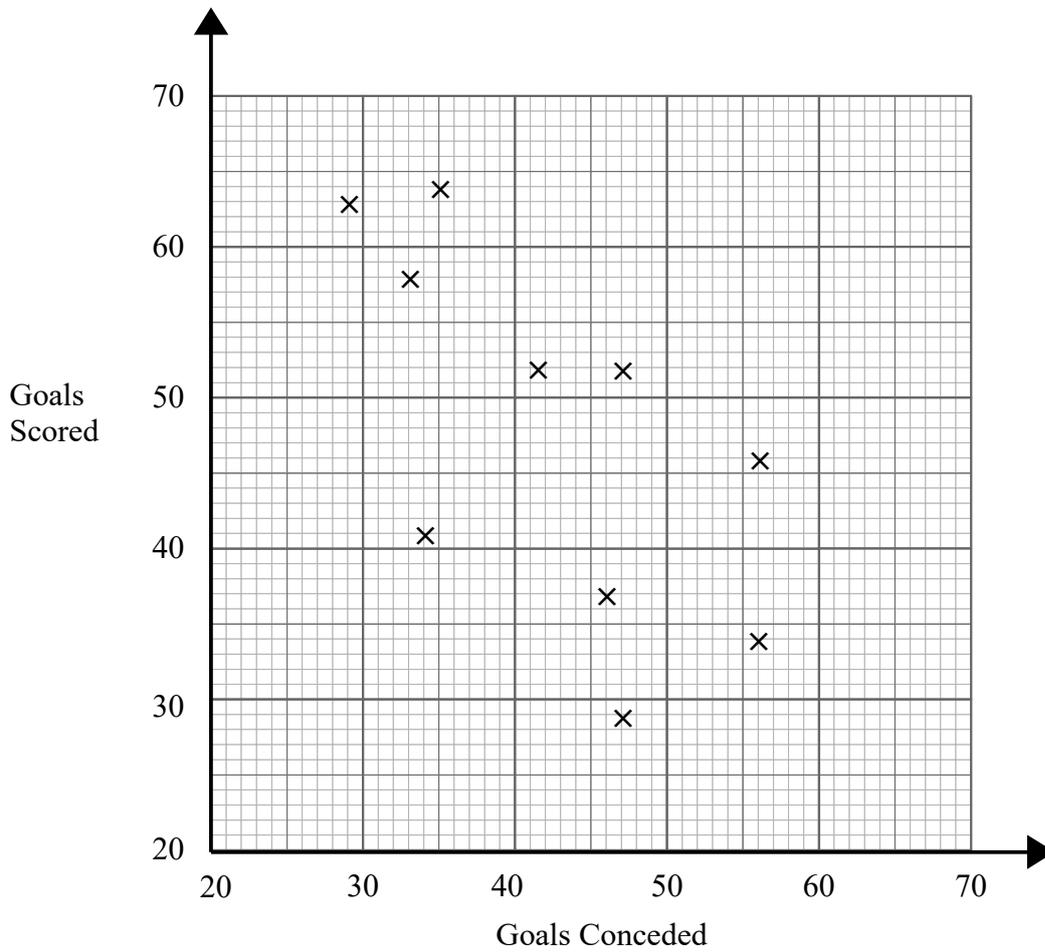
- The marks for each question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

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 Gary recorded how many goals 10 football teams scored. He also recorded how many goals they conceded

The information is shown on the scatter graph.



- (a) What type of correlation does the scatter graph show?

.....
(1)

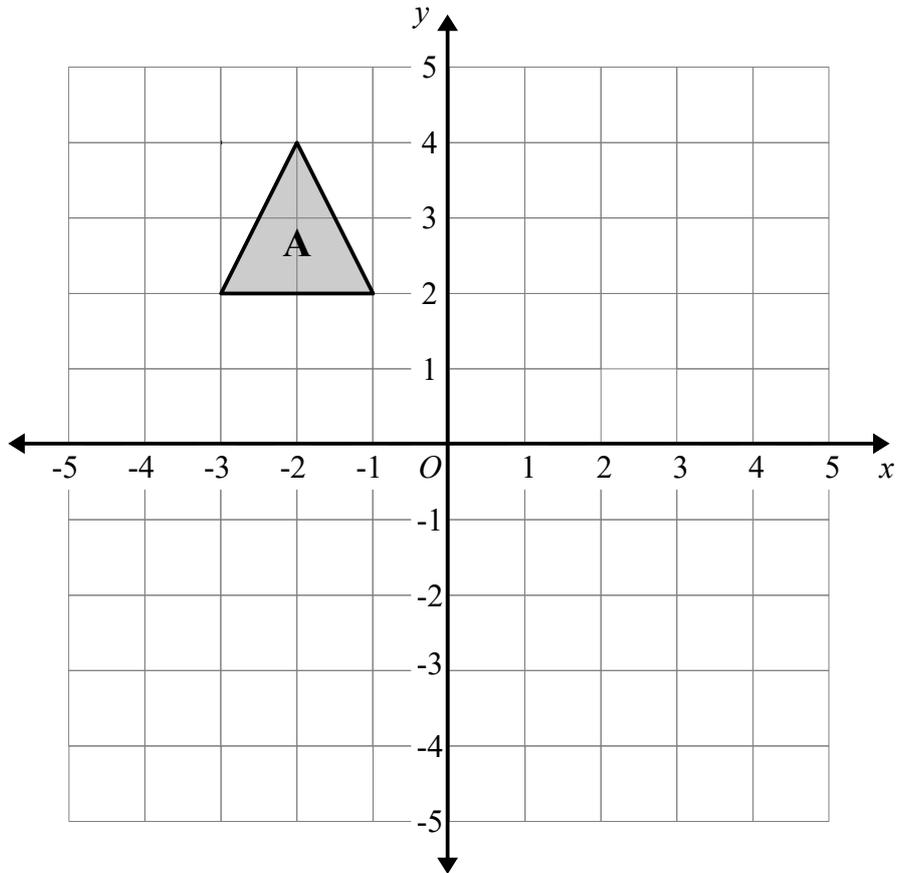
- (b) Another team have conceded 44 goals.

Estimate the number of goals this team has scored.

.....
(2)

(Total for Question 1 is 3 marks)

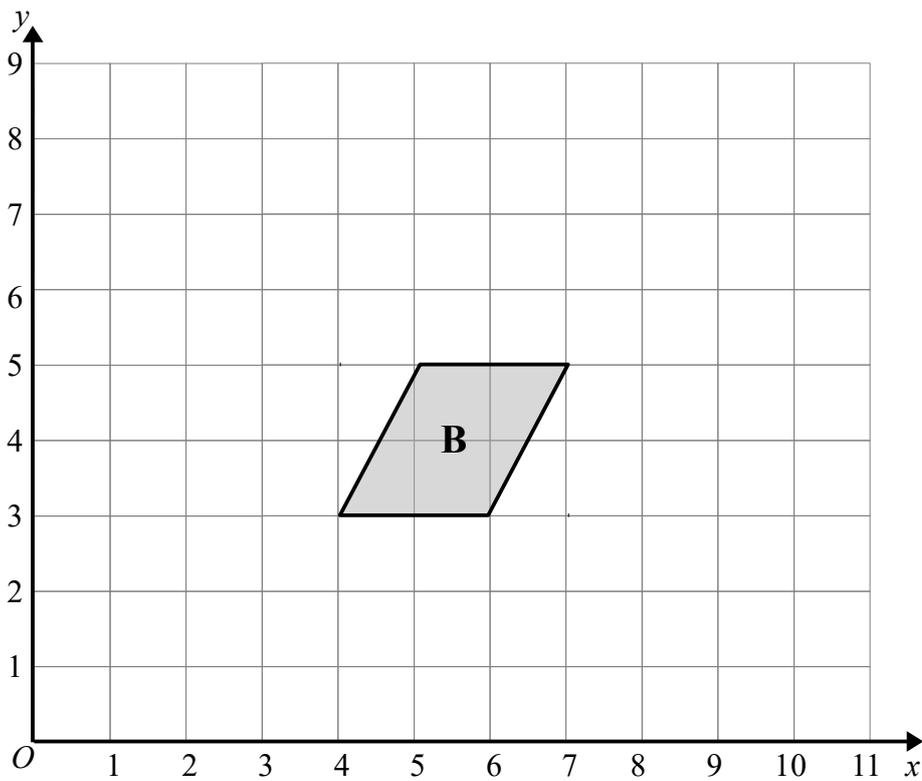
2



Rotate shape **A** 90° about O

(Total for Question 2 is 2 marks)

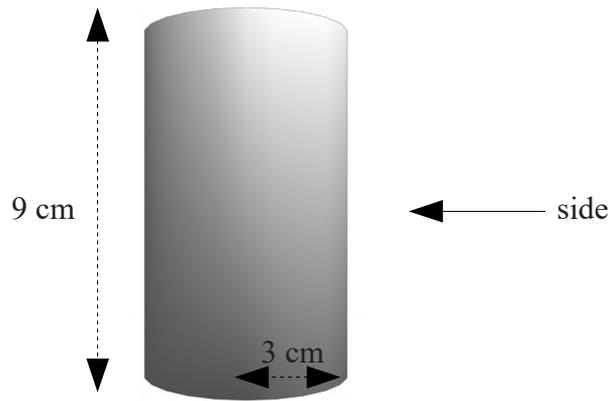
3



Translate shape **B** by the vector $\begin{pmatrix} 2 \\ -3 \end{pmatrix}$

(Total for Question 3 is 2 marks)

4 The diagram shows a cylinder with radius 3 cm and perpendicular height of 9 cm



On the centimetre grid below, draw the plan and the side elevation of the cylinder.



(Total for Question 4 is 3 marks)

5 Find the highest common factor (HCF) of 84 and 112

.....
(Total for Question 5 is 3 marks)

6 Dennis gets paid £8.79 per hour he works.
Each week Dennis works 39 hours.

(a) Work out an estimate for the amount Dennis gets paid in a week.

£.....
(2)

(b) Is your answer to part (a) an underestimate or an overestimate?
Give a reason for your answer.

.....
.....
(1)
(Total for Question 6 is 3 marks)

7 (a) Simplify $(a^4)^3$

(b) Simplify $6m^4n^7 \div 2m^2n$

.....
(1)

.....
(2)

(Total for Question 7 is 3 marks)

8 (a) Expand $6x(2y - 7)$

(b) Expand and Simplify $5(t - 3) + 3(2t - 1)$

.....
(2)

.....
(2)

(Total for Question 8 is 4 marks)

9 A number y is rounded to 1 decimal place.

The result is 1.9

Write down the error interval for y .

.....
(Total for Question 9 is 2 marks)
