

Please check the examination details below before entering your candidate information

Candidate surname					Other names				
Centre Number					Candidate Number				

Pearson Edexcel Level 1/Level 2 GCSE (9–1)

Aiming for Grade 6

Paper reference	1MA1/2H
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Mathematics

PAPER 2 (Calculator)

Higher Tier

31 marks 30 minutes



You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator, Formulae Sheet (enclosed). Tracing paper may be used.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- You must **show all your working**.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.

Information

- The total mark for this paper is 31. There are 11 questions.
- Questions have been broadly arranged in an ascending order of mean difficulty, as found by students achieving Grade 6 in the Summer and November 2023 examinations.
- Questions marked with an asterisk (*) also appear on the Higher Tier paper.
- 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.

Answer all questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- Shakir has to complete two tests.

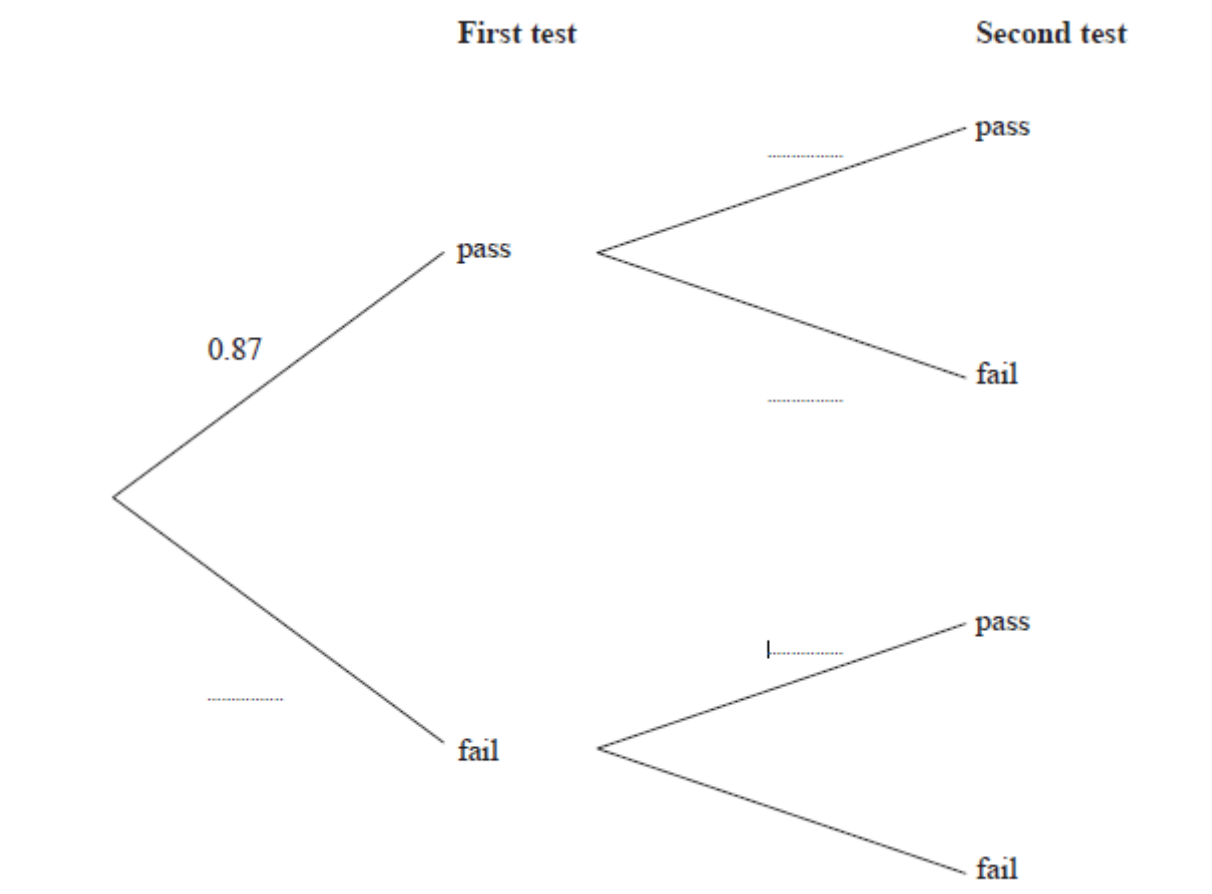
He can either pass or fail each test.

The probability that he will pass the first test is 0.87

If he passes the first test the probability he will pass the second test is 0.94

If he fails the first test the probability he will pass the second test is 0.73

- (a) Complete the probability tree diagram for this information.



- (b) Work out the probability that Shakir passes at least one of the tests.

.....

(Total for Question 1 is 5 marks)

- *2 A number, d , is rounded to 1 decimal place.
The result is 12.7

Complete the error interval for d .

..... $\leq d <$

(Total for Question 2 is 2 marks)

- 3 A number x is written correct to 2 significant figures.
The result is 1.9
Complete the error interval for x .

..... $\leq x <$

(Total for Question 3 is 2 marks)

- 4 Expand and simplify $(x + 7)(x - 2)(x + 3)$

.....

(Total for Question 4 is 3 marks)

5 Use algebra to solve the simultaneous equations

$$2x + 6y = 5$$

$$3x - 4y = -12$$

$$x = \dots\dots\dots$$

$$y = \dots\dots\dots$$

(Total for Question 5 is 4 marks)

***6** $-2 \leq n < 5$

n is an integer.

(a) Write down the greatest possible value of n .

$\dots\dots\dots$
(1)

(b) Solve $\frac{2}{5}g - 4 < 6$

$\dots\dots\dots$
(3)

(Total for Question 6 is 4 marks)

- 7 Show that the equation $x^4 - x^2 - 5 = 0$ can be written in the form $x = \sqrt[4]{x^2 + 5}$

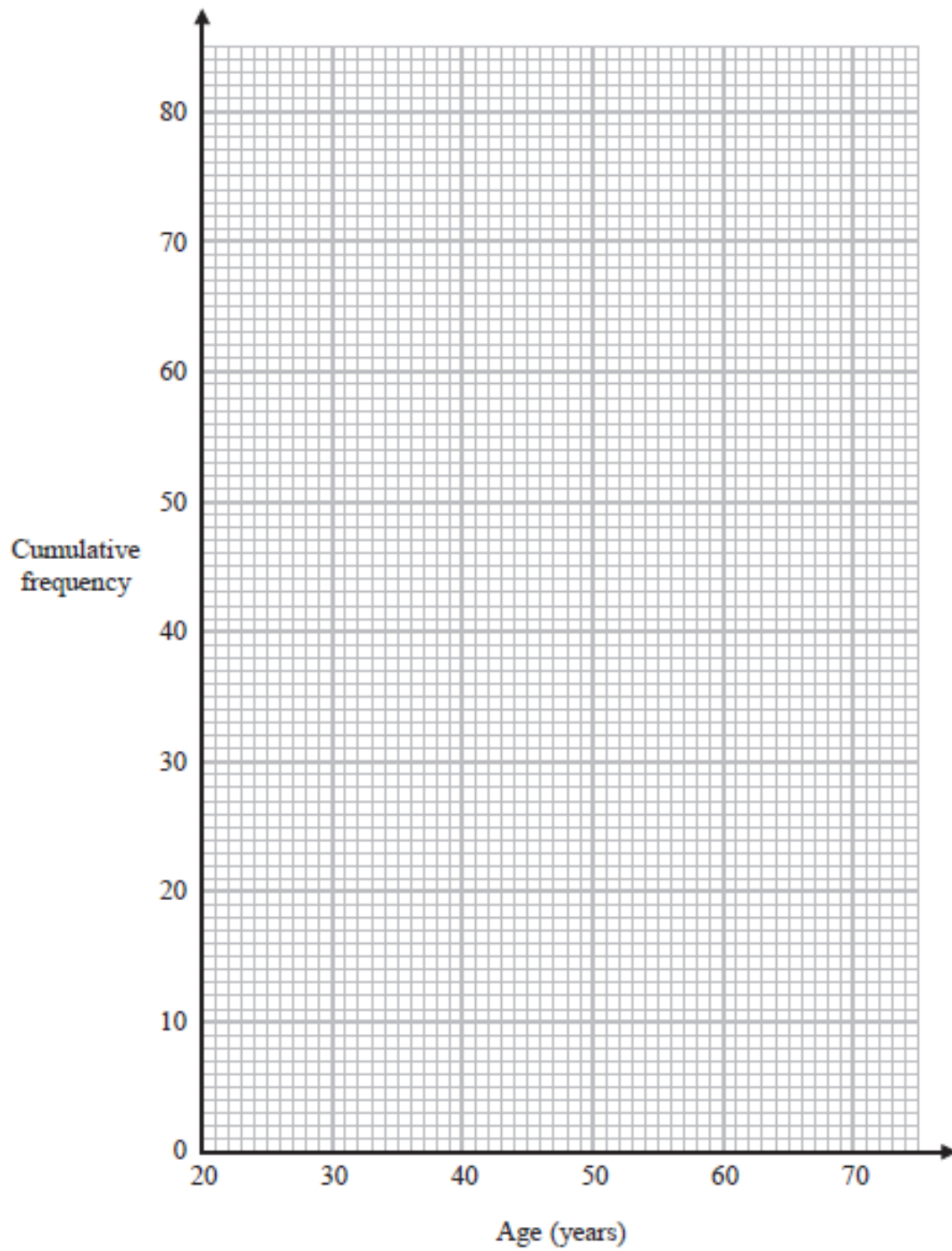
(Total for Question 7 is 1 mark)

- 8 The cumulative frequency table gives information about the ages of 80 people working for a company.

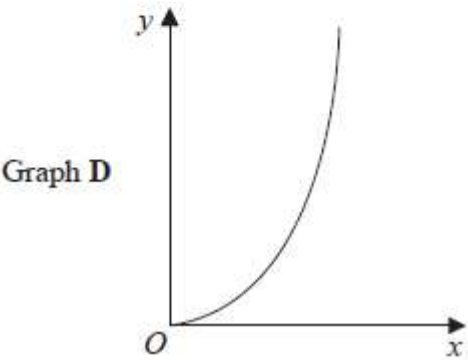
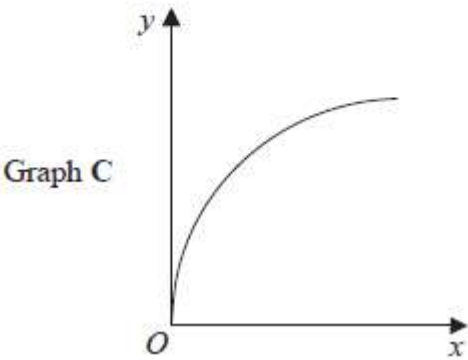
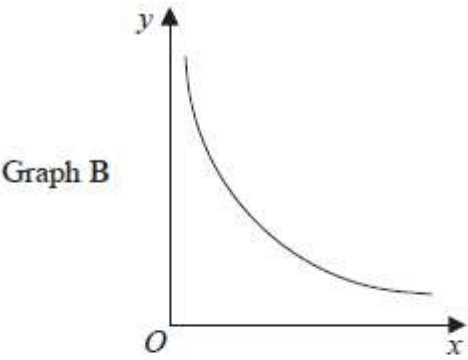
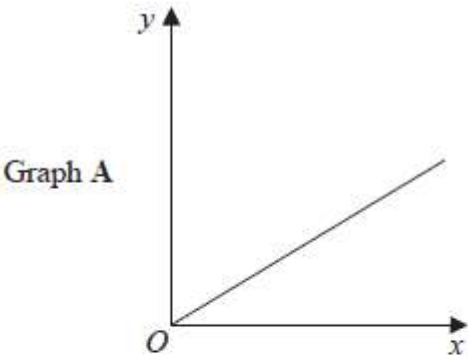
Age (a years)	Cumulative frequency
$20 < a \leq 30$	20
$20 < a \leq 40$	48
$20 < a \leq 50$	64
$20 < a \leq 60$	75
$20 < a \leq 70$	80

On the grid on the next page, draw a cumulative frequency graph for this information.

(2)



(Total for Question 8 is 2 marks)



The graphs of y against x represent four different types of proportionality.
Match each type of proportionality in the table to the correct graph.

Type of proportionality	Graph
$y \propto x^2$	
$y \propto x$	
$y \propto \frac{1}{x}$	
$y \propto \sqrt{x}$	

(Total for Question 9 is 2 marks)

10 The functions f and g are such that

$$f(x) = (2x + 3)^2 \quad \text{and} \quad g(x) = 2x - 1$$

Find $gf(-3)$

.....
(Total for Question 10 is 2 marks)

***11** Chris, Debbie and Errol share some money in the ratio 3 : 4 : 2
Debbie gets £120
Chris then gives some of his share to Debbie and some of his share to Errol.
The money that Chris, Debbie and Errol each have is now in the ratio 2 : 5 : 3
How much money did Chris give to Errol?

£.....
(Total for Question 11 is 4 marks)

TOTAL FOR PAPER IS 31 MARKS