

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 7

Paper reference	1MA1/1H
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Mathematics

PAPER 1 (Non-Calculator)

Higher Tier

35 marks 35 minutes

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, 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.
- **Calculators may not be used.**

Information

- The total mark for this paper is 35. There are 12 questions.
- Questions have been broadly arranged in an ascending order of mean difficulty, as found by students achieving Grade 7 in the Summer and November 2023 examinations.
- Questions marked with an asterisk (*) also appear on the Foundation 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

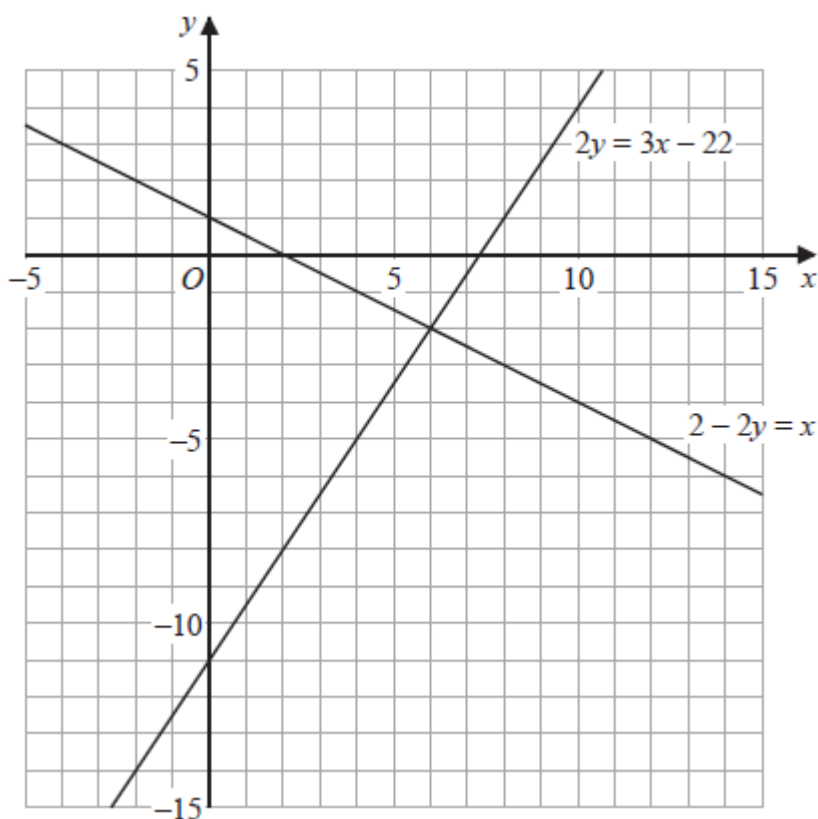
- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Answer all questions.
Write your answers in the spaces provided.
You must write down all the stages in your working.

- 1 The normal price of a mattress is reduced by 40% in a sale.
 The price of the mattress in the sale is £660
 Work out the normal price of the mattress.

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

*2



Use these graphs to solve the simultaneous equations

$$\begin{aligned} 2 - 2y &= x \\ 2y &= 3x - 22 \end{aligned}$$

$x =$

$y =$

(Total for Question 2 is 1 mark)

- 3 Write $\frac{(6x^5y^3)^2}{3x^2y^7 \times 4xy^{-3}}$ in the form ax^by^c where a , b and c are integers.

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

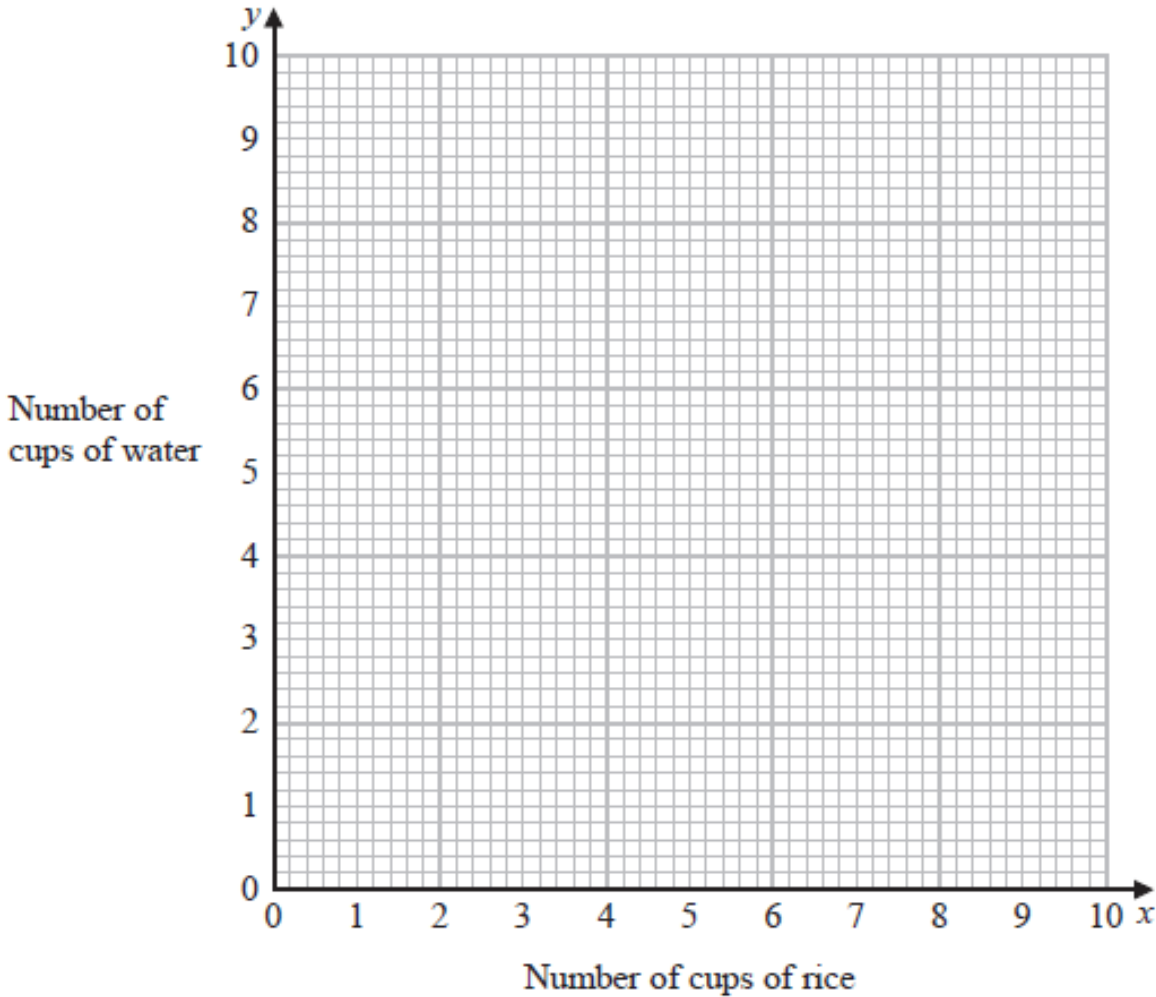
- 4 (a) Write $\frac{1}{16}$ in the form 4^n where n is an integer.

.....
(1)

- (b) Work out the value of $8^{\frac{5}{3}} - 9^{\frac{3}{2}}$

.....
(3)
(Total for Question 4 is 4 marks)

- 5 To cook rice
- the number of cups of rice (x) : the number of cups of water (y) = 4 : 5
- (a) Use this information to draw a graph to show the relationship between the number of cups of rice and the number of cups of water needed to cook rice.



- (b) Find the gradient of the line drawn in part (a). (2)

.....
(1)
(Total for Question 5 is 3 marks)

6 At the start of year n the population of a species is P_n

At the start of the following year the population of the species is given by

$$P_{n+1} = kP_n \text{ where } k \text{ is a positive constant.}$$

The population of the species at the start of year 1 is 8 million.

The population of the species at the start of year 2 is 6 million.

Work out the population of the species at the start of year 3

..... million

(Total for Question 6 is 3 marks)

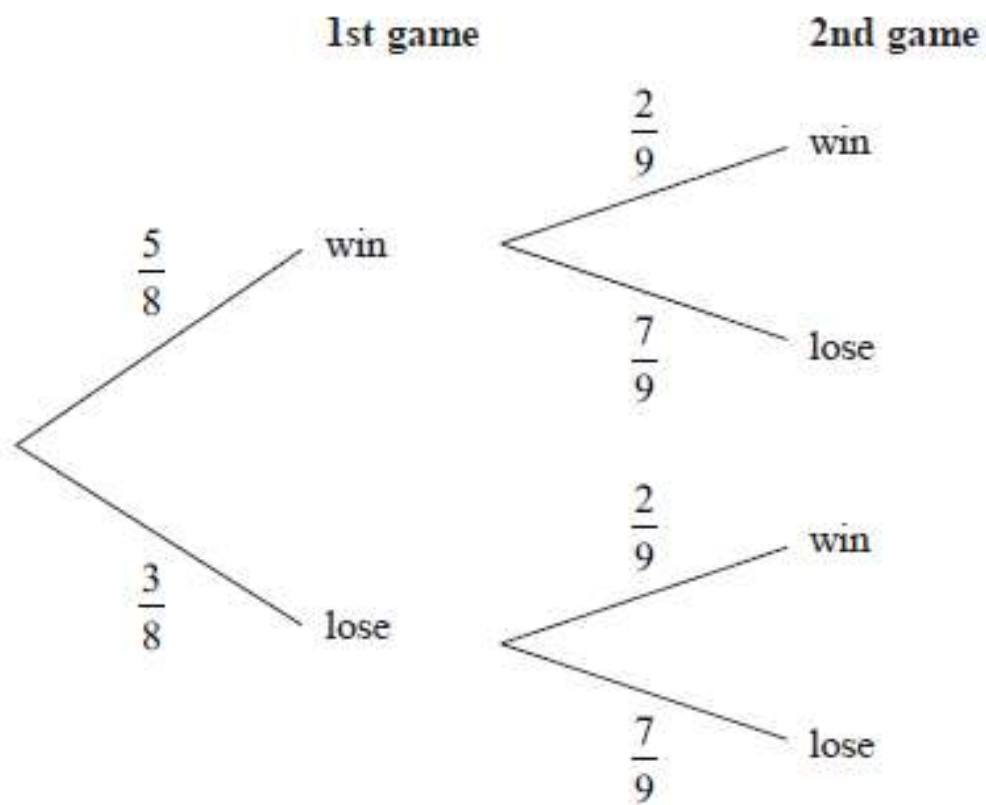
7 Factorise $6x^2 - 5x - 4$

.....

(Total for Question 7 is 2 marks)

- 8 Martha plays a game twice.

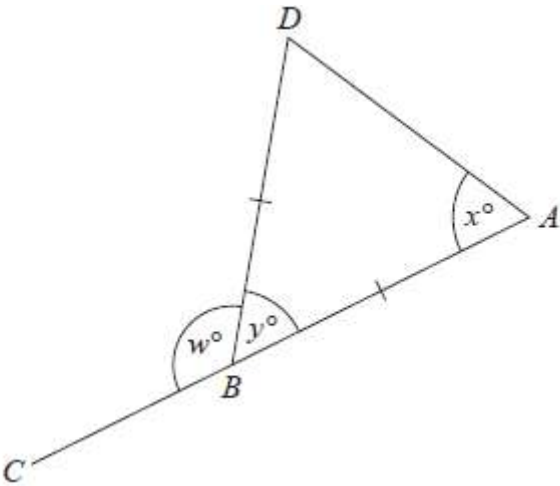
The probability tree diagram shows the probabilities that Martha will win or lose each game.



Find the probability that Martha will lose at least one game.

.....
(Total for Question 8 is 3 marks)

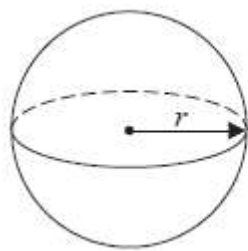
***9** The diagram shows an isosceles triangle ABD and the straight line ABC .



$BA = BD$
 $x : y = 2 : 1$
Work out the value of w .

$w = \dots\dots\dots$
(Total for Question 9 is 4 marks)

10 Here is a sphere.



Surface area of sphere = $4\pi r^2$

$\frac{3}{8}$ of the surface area of this sphere is $75\pi\text{ cm}^2$

Find the diameter of the sphere.
Give your answer in the form $a\ b$ where a is an integer and b is a prime number.

..... cm
(Total for Question 10 is 4 marks)

11 Spinner **A** and spinner **B** are each spun once.

The probability that spinner **A** lands on red is $\frac{1}{4}$

The probability that both spinner **A** and spinner **B** land on red is $\frac{1}{24}$

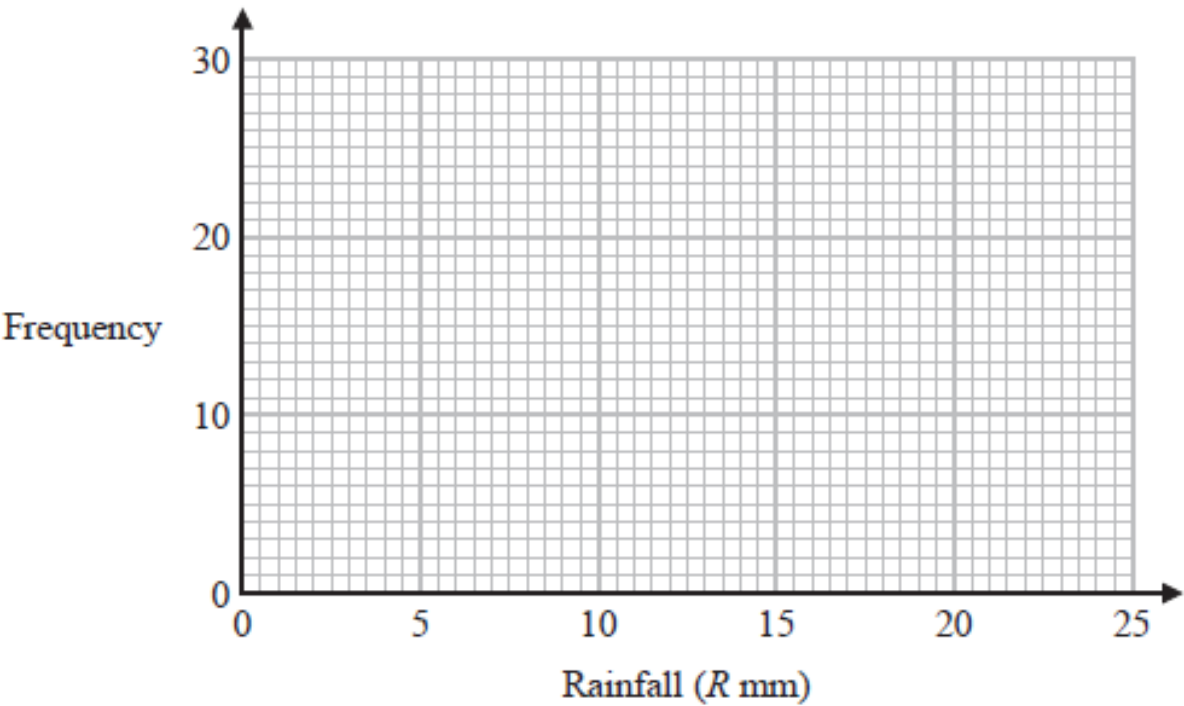
Work out the probability that one spinner lands on red and the other spinner does **not** land on red.

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

***12** The table shows information about the daily rainfall in a town for 60 days.

Rainfall (R mm)	Frequency
$0 \leq R < 5$	8
$5 \leq R < 10$	24
$10 \leq R < 15$	13
$15 \leq R < 20$	11
$20 \leq R < 25$	4

Draw a frequency polygon for this information.



(Total for Question 12 is 2 marks)

TOTAL FOR PAPER IS 35 MARKS