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1MA1 June 2027 Paper 2H Best Guess Paper

Higher · Standard · Question Paper

Disclaimer

This independently compiled practice paper is for students preparing for Pearson Edexcel GCSE Mathematics (1MA1), Higher Tier, Paper 2H. A calculator may be used.

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Revise the full specification. Attempt the matching question paper before using the mark scheme, model answers and practice resources at www.mygrade9mathstutor.com.

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Video walkthrough

Full walkthrough QR not yet linked.

Calculator allowed · 21 questions · 80 marks · Suggested time: 1 hour 30 minutes.

Answer ALL TWENTY-ONE questions
Write your answers in the spaces provided
You must show all stages of your working

1 Here are the first five terms of an arithmetic sequence:

7 11 15 19 23

(a) Find an expression, in terms of n, for the n-th term of this sequence.

.....

(2)

(b) Show that 87 is a term in this sequence.

(2)

(Total for Question 1 is 4 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 4 Review: ____ / ____

2 Sophie wants to exchange 1200 US dollars for euros. She compares two bureaux de change.
Bureau A offers 1 US dollar = 0.92 euros and charges no commission.
Bureau B offers 1 US dollar = 0.95 euros and charges a fee of 20 US dollars. This fee is deducted from Sophie's 1200 US dollars before the remaining US dollars are converted to euros.

Which bureau gives Sophie more euros, and how many more euros does it give?
Show all your working.

Bureau: .....

Difference: ..... euros

(Total for Question 2 is 4 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
QR not available yet	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 4 Review: ____ / ____

3 The table shows information about the heights, h cm, of 40 plants.

Height (h cm)	Frequency
$10 < h \leq 20$	8
$20 < h \leq 30$	14
$30 < h \leq 40$	12
$40 < h \leq 50$	6

(a) Write down the modal class interval. (1)

..... cm

(b) Calculate an estimate for the mean height of the plants. (3)

..... cm

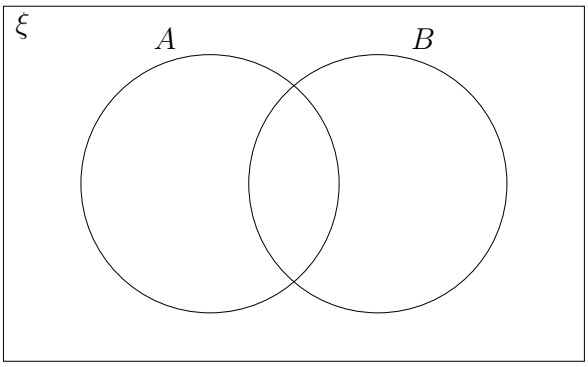
(Total for Question 3 is 4 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 4 Review: ____ / ____

4

The universal set $\xi = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\}$.
$A = \{\text{prime numbers in } \xi\}$; $B = \{\text{multiples of 3 in } \xi\}$.

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



(3)

(b) A number is chosen at random from ξ.
Find the probability that it is in $A \cup B$.

. . . . . .

(1)

(Total for Question 4 is 4 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 4 Review: ____ / ____

5 A solid cylinder has a radius of 5.4 cm and a height of 12 cm.
Work out the total surface area of the cylinder. Give your answer correct to 3 significant figures.

..... cm²

(Total for Question 5 is 3 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 3 Review: ____ / ____

6 Change a speed of 90 kilometres per hour to a speed in metres per second.
Show your working clearly.

..... m/s

(Total for Question 6 is 2 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 2 Review: ____ / ____

7 Find the equation of the line that passes through (2, 5) and (6, 17).
Give your answer in the form $y = mx + c$.

(Total for Question 7 is 3 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 3 Review: ____ / ____

8 **Zoe** wants to make a total of 180 bags of beads to sell at a fair.
She will make small bags and large bags where
number of small bags : number of large bags = 7 : 5

Each small bag will contain 65 grams of beads.
Each large bag will contain 145 grams of beads.

Zoe thinks she will need less than 17 kilograms of beads to fill 180 bags.

Is Zoe correct?
You must show how you get your answer.

Total mass = ... kg

(Total for Question 8 is 4 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 4 Review: ____ / ____

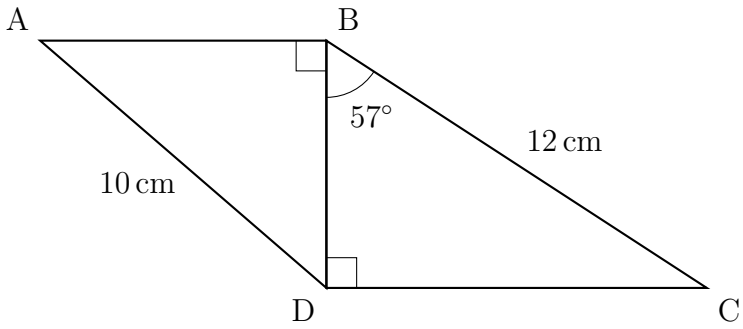
9 A car decreases in value by 12% each year. The car is currently worth £15,400.
Work out the value of the car 3 years ago. Give your answer to the nearest pound.

£ .....

(Total for Question 9 is 3 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 3 Review: ____ / ____

10 The diagram shows two right-angled triangles ABD and BCD, sharing a common side BD.
$AD = 10\,\text{cm}$, $BC = 12\,\text{cm}$ and angle $DBC = 57°$.



Not to scale

Work out the length of AB.
Give your answer correct to 3 significant figures.

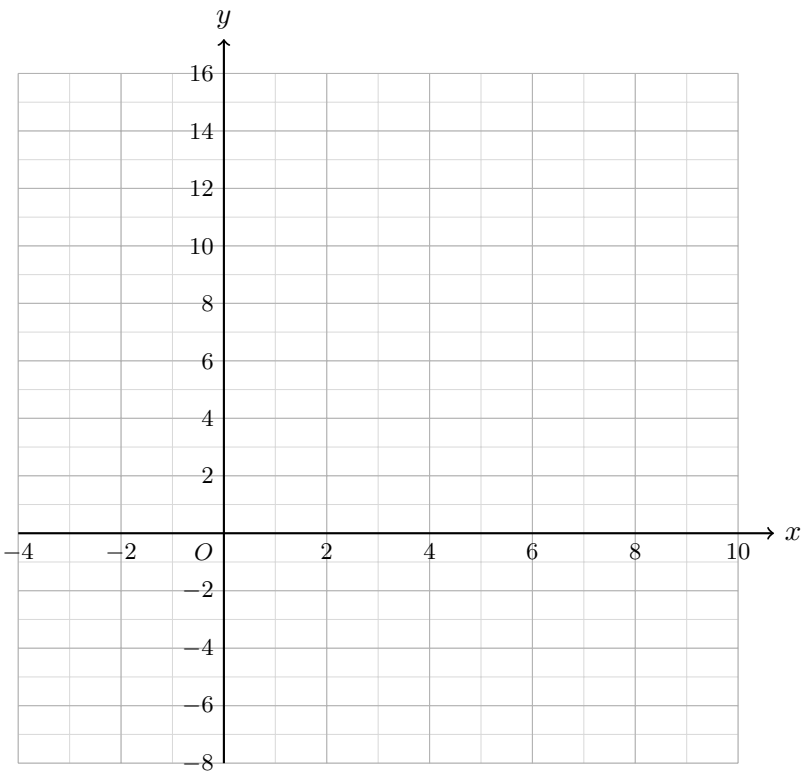
AB = ... cm

(Total for Question 10 is 4 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
QR not available yet	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 4 Review: ____ / ____

11 (a) On the grid, draw the four boundary lines and shade the region that satisfies all four inequalities. Label the region R.

$x > 1$ $y < 11$ $2x - y < 5$ $3x + 2y > 15$



(2 marks)

(b) Find n, the number of points in R with coordinates (4, y) where y is an integer.

n = ...(1 mark)

(Total for Question 11 is 3 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
QR not available yet	Scan / click	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 3 Review: ____ / ____

12 A, B, and C are points on the circumference of a circle, centre O.
PA and PB are tangents to the circle from point P.
Angle $APB = 56°$.

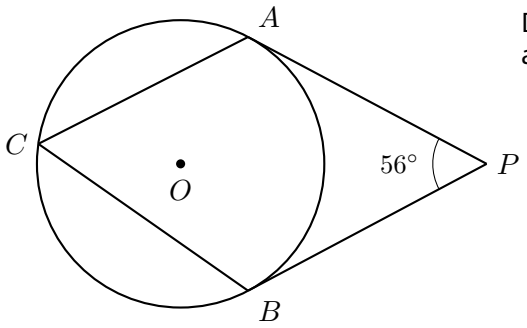


Diagram **NOT** accurately drawn

Work out the size of angle ACB.
You must give a reason for each stage of your working.

.....°

(Total for Question 12 is 4 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
QR not available yet	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 4 Review: ____ / ____

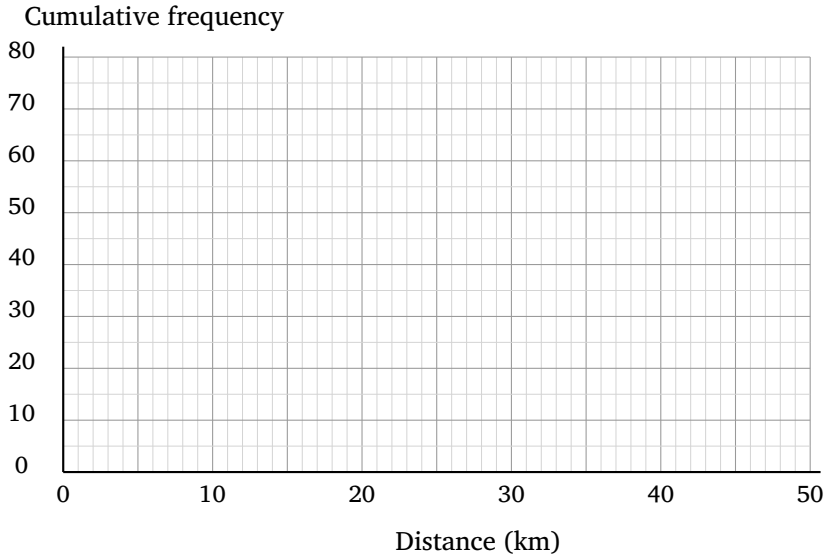
13 The table shows the distances travelled to an office by 80 workers.

Distance (d km)	Frequency	Cumulative frequency
$0 < d \leq 10$	14	
$10 < d \leq 20$	28	
$20 < d \leq 30$	22	
$30 < d \leq 40$	12	
$40 < d \leq 50$	4	

(a) Complete the cumulative frequency column.

(1)

(b) Draw a cumulative frequency graph on the grid.



(2)

(c) Use your graph to estimate the interquartile range.

Interquartile range = ... km

(2)

(Total for Question 13 is 5 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
QR not available yet	QR not available yet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 5 Review: ____ / ____

14 y is directly proportional to the cube of x.
When $x = 2$, $y = 40$.
Find x when $y = 1080$.

(Total for Question 14 is 3 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 3 Review: ____ / ____

15 Make x the subject of

$$y = \frac{2x + 5}{x - 3}$$

(Total for Question 15 is 3 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
QR not available yet	QR not available yet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 3 Review: ____ / ____

16 A train travels 230 km, correct to the nearest 10 km.
The journey takes 4.5 hours, correct to 1 decimal place.
Calculate the upper bound for the average speed, in km/h, to 3 significant figures.
Show your working clearly.

Upper bound = ... km/h

(Total for Question 16 is 4 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
QR not available yet	QR not available yet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 4 Review: ____ / ____

17 Solids A and B are mathematically similar.
Their total surface areas are 40 cm^2 and 90 cm^2 respectively.
The volume of A is 120 cm^3. Calculate the volume of B.

..... cm^3

(Total for Question 17 is 4 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
QR not available yet	QR not available yet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 4 Review: ____ / ____

18 ABCDEFGH is a cuboid. ABCD is the base, with E, F, G and H vertically above A, B, C and D.
AB = 10 cm, BC = 6 cm and CG = 5 cm.
Calculate the angle between BH and plane ABCD. Give your answer to 1 decimal place.

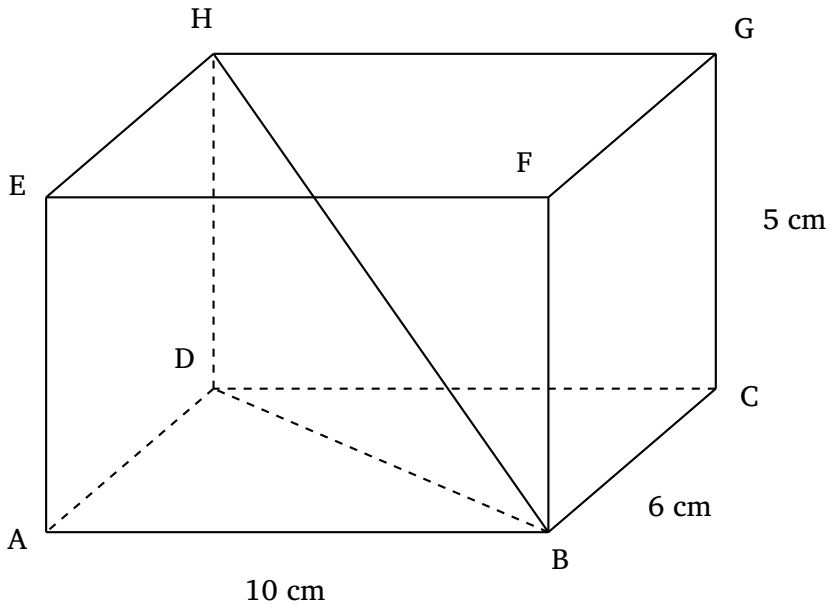


Diagram not to scale

Angle = ... °

(Total for Question 18 is 4 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
QR not available yet	QR not available yet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 4 Review: ____ / ____

19 Solve the simultaneous equations.
Give your solutions in exact form, showing clear algebraic working.

$$2x^2 + y^2 = 30$$

$$y = 2x - 3$$

(Total for Question 19 is 5 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
QR not available yet	QR not available yet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 5 Review: ____ / ____

20 A bag contains only red and blue counters. Exactly 5 counters are red.
Two counters are taken at random without replacement.
The probability that both are red is

$$\frac{5}{14}$$

Work out the total number of counters. Show clear algebraic working.

..... counters

(Total for Question 20 is 5 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
QR not available yet	QR not available yet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 5 Review: ____ / ____

21 In triangle ABC, AB = x cm, BC = (x + 2) cm, AC = 7 cm and angle ABC = 60°.
Find the exact value of x. Show clear algebraic working.

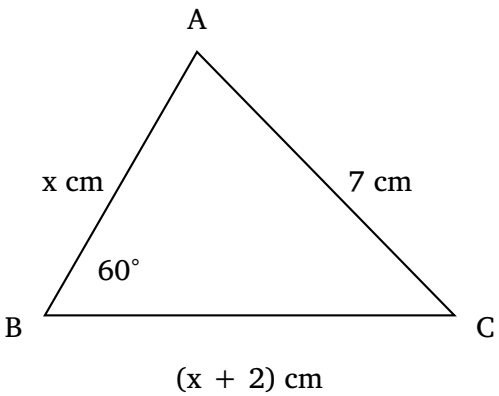


Diagram not to scale

(Total for Question 21 is 5 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
QR not available yet	QR not available yet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 5 Review: ____ / ____