

Surname

Other names

Centre Number

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Candidate Number

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GCSE (9-1) Mathematics

Predicted Practice Paper

PAPER 1 (Non-Calculator)

Higher Tier

Predicted paper for Summer 2027 examinations

Written in the style of the Edexcel 1MA1 specification

Time: 1 hour 30 minutes

Total marks: 80

IMPORTANT — PLEASE READ: This is a predicted practice paper. It is NOT an official Edexcel paper, NOT a past paper, and is NOT endorsed by or affiliated with Pearson Edexcel. All questions are original. Topics were chosen by analysing previous exam papers, but they are NOT guaranteed to appear in any real examination. Revise the full specification.

You must have:

Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser. Tracing paper may be used.

Instructions

- Answer every question.
- Write your answers in the spaces provided and show all your working clearly.
- Do not use a calculator at any point in this paper.
- Diagrams are not drawn accurately unless the question says otherwise.

Information

- The paper is worth 80 marks in total.
- The marks available for each question are shown in brackets — use them to judge how long to spend.

Advice

- Read each question carefully before you begin.
- Attempt every question, even if you are unsure.
- If you finish early, use the time to check your answers.

Turn over

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1** Write 0.45 as a fraction in its simplest form.

(Total for Question 1 is 1 mark)

DO NOT WRITE IN THIS AREA

2 Work out $\frac{3}{5} + \frac{2}{3}$

Give your answer as a mixed number in its simplest form.

(Total for Question 2 is 3 marks)

DO NOT WRITE IN THIS AREA

3 Write 240 as a product of its prime factors.
Give your answer in index form.

(Total for Question 3 is 2 marks)

DO NOT WRITE IN THIS AREA

4 Work out $(2^3 \times 2^4) \div 2^5$

(Total for Question 4 is 2 marks)

DO NOT WRITE IN THIS AREA

5 Work out $(8 \times 10^6) \div (2 \times 10^{-3})$

Give your answer in standard form.

(Total for Question 5 is 2 marks)

DO NOT WRITE IN THIS AREA

6 A rectangle has length 8.4 cm and width 5.2 cm, both measured to the nearest 0.1 cm.

(a) Write down the upper bound of the length.

----- (1)

(b) Work out the upper bound of the area of the rectangle.

----- (2)

(c) Work out the lower bound of the area of the rectangle.

----- (1)

(Total for Question 6 is 4 marks)

DO NOT WRITE IN THIS AREA

7 (a) Find the highest common factor (HCF) of 36 and 60.

----- (2)

(b) Hence write $\frac{36}{60}$ as a fraction in its simplest form.

----- (1)

(Total for Question 7 is 3 marks)

DO NOT WRITE IN THIS AREA

8 (a) Write the recurring decimal $0.666\dots$ as a fraction in its simplest form.

----- (2)

(b) Write the recurring decimal $0.272727\dots$ as a fraction in its simplest form.

----- (1)

(Total for Question 8 is 3 marks)

DO NOT WRITE IN THIS AREA

9 Solve $5x - 7 = 33$

(Total for Question 9 is 2 marks)

DO NOT WRITE IN THIS AREA

10 Expand and simplify $3(x + 4) + 2(x - 5)$

(Total for Question 10 is 2 marks)

DO NOT WRITE IN THIS AREA

11 $v = u + at$

Make t the subject of the formula.

(Total for Question 11 is 3 marks)

DO NOT WRITE IN THIS AREA

12 The first four terms of a sequence are 3, 8, 15, 24.
Find an expression, in terms of n , for the n th term of the sequence.

(Total for Question 12 is 3 marks)

DO NOT WRITE IN THIS AREA

13 Solve the simultaneous equations

$$3x + 2y = 18$$

$$x - 2y = -2$$

(Total for Question 13 is 3 marks)

DO NOT WRITE IN THIS AREA

14 Solve $2x^2 + 7x - 4 = 0$

(Total for Question 14 is 4 marks)

DO NOT WRITE IN THIS AREA

- 15** (a) Simplify $2\sqrt{27} - \sqrt{12}$, giving your answer in the form $a\sqrt{3}$, where a is an integer.

----- (2)

- (b) Rationalise the denominator of $10/\sqrt{5}$, giving your answer in its simplest form.

----- (2)

(Total for Question 15 is 4 marks)

DO NOT WRITE IN THIS AREA

16 Prove that the sum of two consecutive odd numbers is always divisible by 4.

(Total for Question 16 is 3 marks)

DO NOT WRITE IN THIS AREA

17 Share £120 in the ratio 2 : 3 : 5.

(Total for Question 17 is 2 marks)

DO NOT WRITE IN THIS AREA

18 The price of a laptop is £80 before a sale.
In the sale the price is increased by 15%.
Work out the sale price of the laptop.

(Total for Question 18 is 3 marks)

DO NOT WRITE IN THIS AREA

19 £2000 is invested at a compound interest rate of 3% per year.

Work out the value of the investment after 2 years.

(Total for Question 19 is 4 marks)

DO NOT WRITE IN THIS AREA

20 y is directly proportional to x^2 .

When $x = 6$, $y = 36$.

Find the value of y when $x = 4$.

(Total for Question 20 is 3 marks)

DO NOT WRITE IN THIS AREA

21 Two packs of coffee are on sale:

Pack A: 400 g for £1.20

Pack B: 600 g for £1.65

Which pack is better value for money? You must show your working.

(Total for Question 21 is 2 marks)

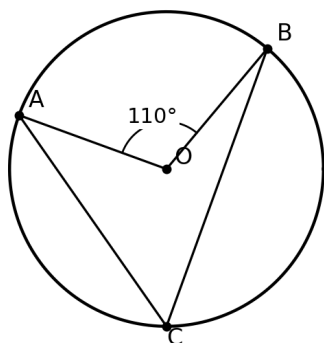
DO NOT WRITE IN THIS AREA

22 Triangle ABC is right-angled at B.
AB = 6 cm and angle BAC = 30° .
Work out the exact length of AC.
Give your answer in its simplest surd form.

(Total for Question 22 is 3 marks)

DO NOT WRITE IN THIS AREA

- 23** In the diagram, O is the centre of the circle and points A, B and C lie on the circumference. Angle $AOB = 110^\circ$.

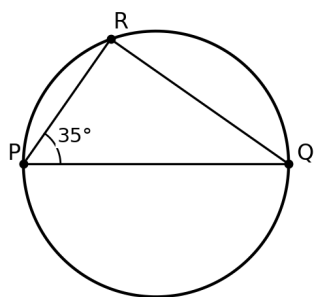


- (a) Work out the size of angle ACB. Give a reason for your answer.

(2)

DO NOT WRITE IN THIS AREA

P and Q are two points on the circumference such that PQ is a diameter of the circle. R is a point on the circumference and angle QPR = 35° .



(b) Work out the size of angle PQR.

----- (2)

(Total for Question 23 is 4 marks)

DO NOT WRITE IN THIS AREA

24 $a = (3, 1)$ and $b = (2, -4)$ are column vectors.

(a) Work out $2a + b$ as a column vector.

----- (2)

(b) Work out the exact value of $|a|$, the magnitude of vector a .

----- (1)

(Total for Question 24 is 3 marks)

DO NOT WRITE IN THIS AREA

25 A rectangle has length $(\sqrt{5} + 2)$ cm and width $(\sqrt{5} - 2)$ cm.

(a) Show that the area of the rectangle is 1 cm^2 .

----- (2)

(b) Show that the perimeter of the rectangle is $4\sqrt{5}$ cm.

----- (2)

(Total for Question 25 is 4 marks)

DO NOT WRITE IN THIS AREA

26 A bag contains 3 red counters and 5 blue counters.

Amara takes two counters from the bag at random, without replacement.

Work out the probability that Amara takes two counters of the same colour.

(Total for Question 26 is 4 marks)

DO NOT WRITE IN THIS AREA

27 The table shows the number of goals scored by 20 footballers in a season.

Number of goals	0	1	2	3	4
Frequency	4	7	5	3	1

(a) Work out the total number of footballers.

----- (1)

(b) Work out the mean number of goals scored.

----- (3)

(Total for Question 27 is 4 marks)

END OF PAPER

DO NOT WRITE IN THIS AREA