Write your name here

Surname	Other names

Centre Number | Candidate Number

EDEXCEL Mock Test Papers paper1-Test1

Mathematics — **Higher Tier**

Paper 1 (Non-Calculator)
Time: 1 hour 30 minutes

Paper Reference **1H**

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser.

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.
- **Calculators may not be used.**
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out**.

Information

- The total mark for this paper is 80 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 Work out 9.72×4.7

.....

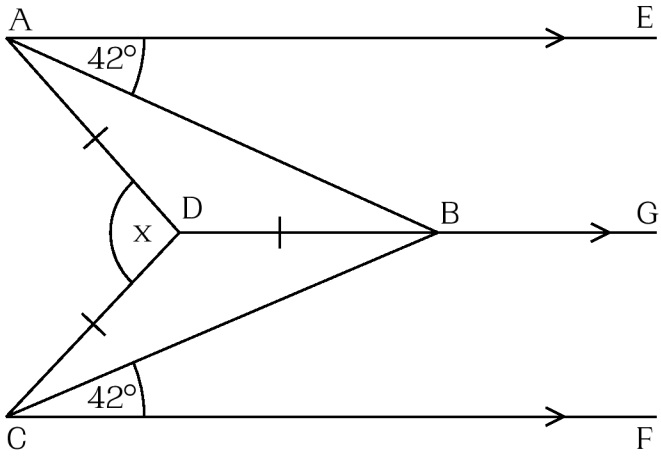
(Total for Question 1 is 3 marks)

2 Expand and simplify $(x + 9)(x + 2)$

.....

(Total for Question 2 is 2 marks)

3



AE, DBG and CF are parallel. DA = DB = DC.
Angle EAB = angle BCF = 42°

Work out the size of the angle marked x.

You must show your working.

.....°

(Total for Question 3 is 3 marks)

4 Alex drove from Manchester to Birmingham.
It took him 4 hours at an average speed of 70 km/h.

Emily drove from Manchester to Birmingham.

She took 6 hours.

(a) Assuming Emily drove along the same roads as Alex and did not take a break,

calculate Emily's average speed from Manchester to Birmingham.

..... km/h
(3)

(b) If Emily did not drive along the same roads as Alex, explain how this could affect your answer to part (a).

.....

.....

(1)

(Total for Question 4 is 4 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

5 In a school, the ratio of the number of teachers to the number of students is 4:9.

35% of the teachers are part-time.

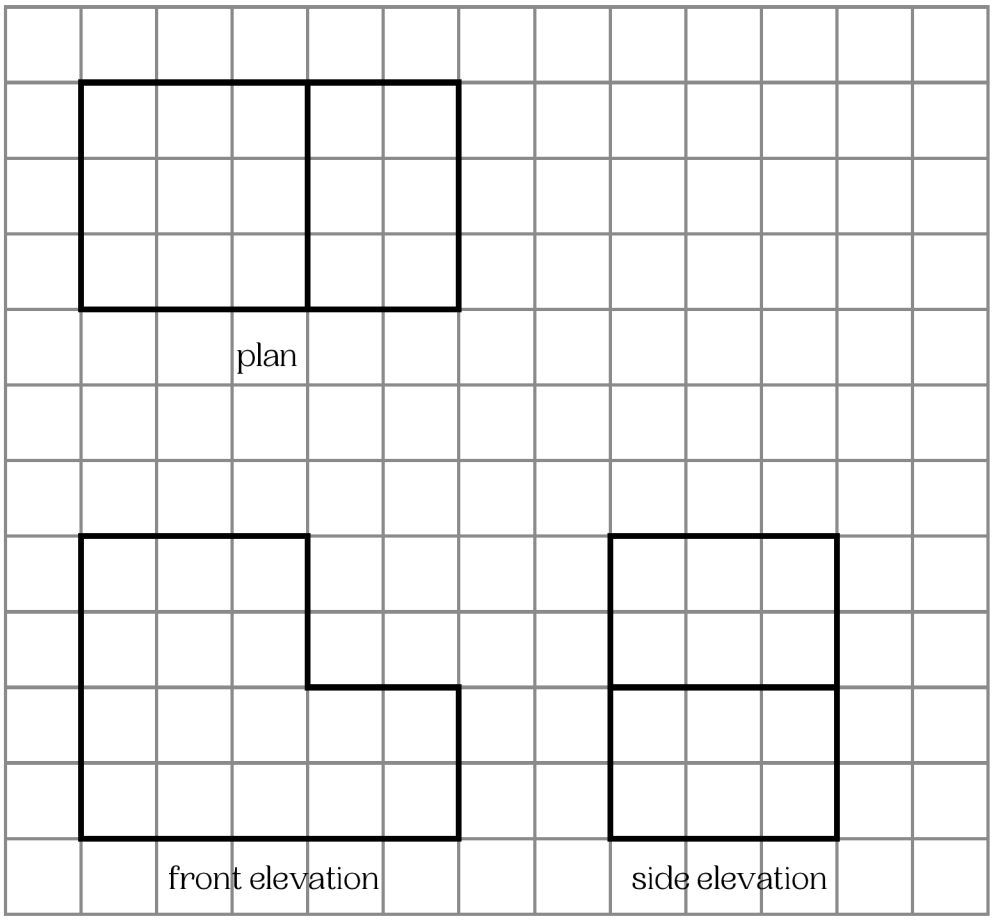
15% of the students are in advanced courses.

What percentage of all the people in the school are either part-time teachers or students in advanced courses?

..... %

(Total for Question 5 is 4 marks)

6 The plan, front elevation and side elevation of a solid prism are drawn on a centimetre grid.



In the space below, draw a sketch of the solid prism.

Write the dimensions of the prism on your sketch.

(Total for Question 6 is 2 marks)

7 There are 800 people living in a neighborhood.

Sam is organizing a community barbecue and wants to order the right number of burgers.

He asks 50 people in the neighborhood which type of burger they prefer.

The results are shown in the table below:

Burger Type	Number of People
Beef	18
Chicken	12
Vegetarian	10
Vegan	10

Based on this sample, estimate how many chicken burgers Sam should order for all 800 people.

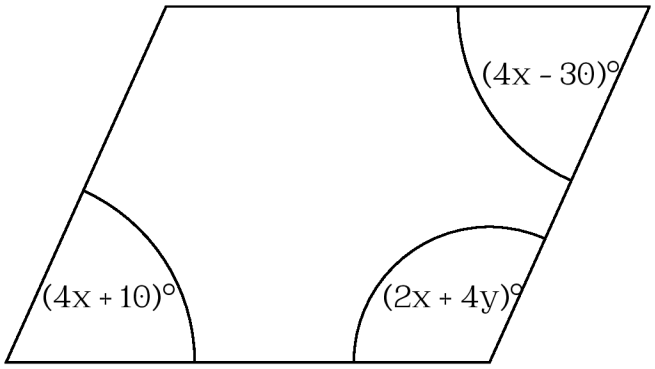
Write down any assumption you make and explain how this could affect your answer.

.....

.....

(Total for Question 7 is 3 marks)

8 Here is a parallelogram.



Work out the value of x and the value of y.

x = ...

y = ...

(Total for Question 8 is 5 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

9 Work out the value of $(6 \times 10^{-8}) \times (4 \times 10^{6})$
Give your answer in standard form.

.....

(Total for Question 9 is 2 marks)

10 (a) Write down the value of $81^{\frac{1}{2}}$

.....

(1)

(b) Find the value of $\left(\frac{64}{343}\right)^{3}$

.....

(2)

(Total for Question 10 is 3 marks)

11 One gold atom has a mass of 3.27×10^{-22} grams.

(a) Estimate the number of gold atoms in 1 kilogram of gold.

.....

(3)

(b) Do you think your answer to part (a) is an underestimate or an overestimate? Explain your reasoning.

.....

.....

(1)

(Total for Question 11 is 4 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

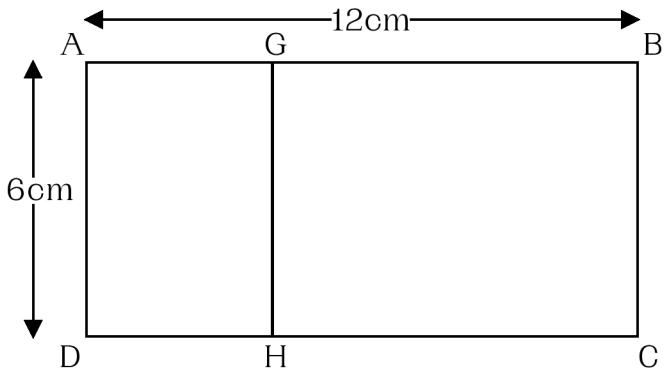
12 The price of a concert ticket increases by 15%.

This 15% increase adds £45 to the price of the ticket.
Work out the price of the concert ticket before the increase.

£.. .....

(Total for Question 12 is 2 marks)

13 Rectangle ABCD is mathematically similar to rectangle DAGH.



AB = 12 cm.
AD = 6 cm.

Work out the area of rectangle DAGH

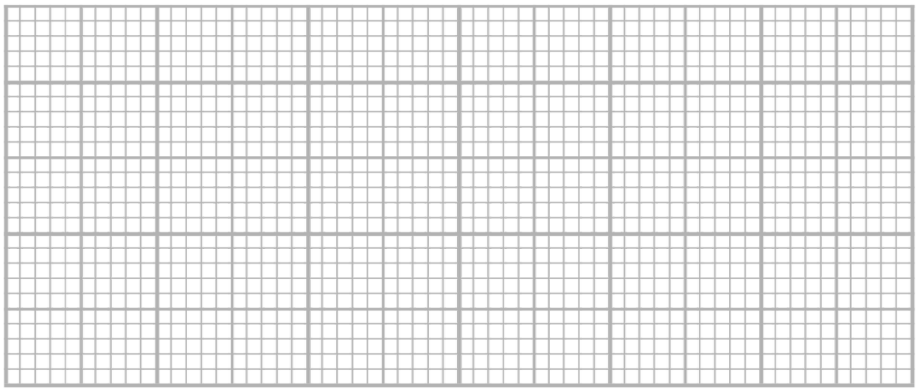
..... cm^2

(Total for Question 13 is 3 marks)

14 Mia played 12 games of tennis.
Here are the points she scored in each game:

10 12 14 15 16 17 17 18 19 20 21 22

(a) Draw a box plot for this information.



Oliver also played 12 games of tennis.

(3)

The median number of points Oliver scored is 18

The interquartile range of these points is 8

The range of these points is 14

(b) Who is more consistent at scoring points, Mia or Oliver?

You must give a reason for your answer.

.....

.....

.....

(2)

(Total for Question 14 is 5 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

15 In a shop, all normal prices are reduced by 15% to give the sale price.

The sale price of a pair of shoes is then further reduced by 10%.

Jack says,

"15 + 10 = 25, so this means that the normal price of the shoes has been reduced by 25%."

Is Jack right?

You must give a reason for your answer.

.....

.....

.....

(Total for Question 15 is 2 marks)

16 Factorise fully $25x^2 - 5$

.....

(Total for Question 16 is 2 marks)

17 Make a the subject of $a - 6 = \frac{2a + 8}{r}$

.....

(Total for Question 17 is 3 marks)

18 A cylinder has a volume of 1500 cm^3 and a height of 50 cm.
The cylinder exerts a force of 120 newtons on the floor.
Work out the pressure on the floor due to the cylinder.

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

.....newtons/cm2

(Total for Question 18 is 3 marks)

19 Solve $x^2 > 5x + 6$

.....

(Total for Question 19 is 3 marks)

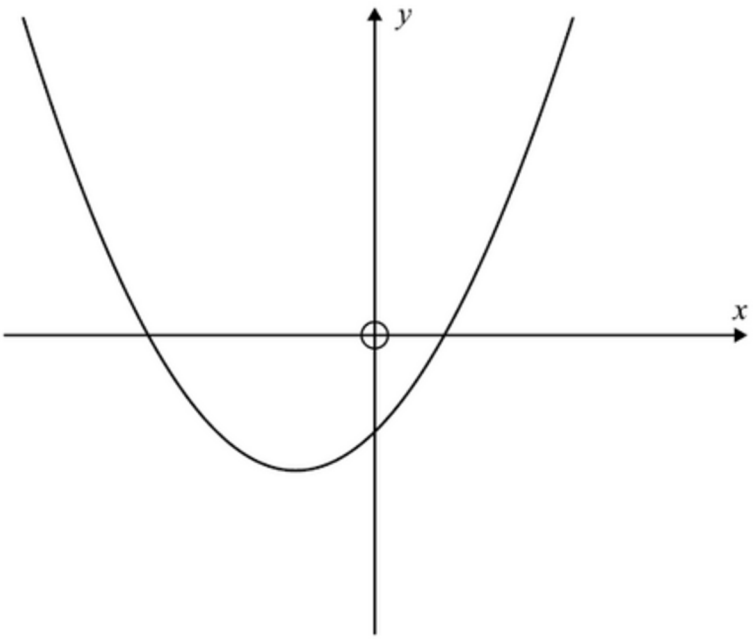
20 Write $\frac{(8x^6y^3)}{4x^6y^3 \times 6xy^{-4}}$ in the form ax^by^c where a, b and c are integers.

.....

(3)

(Total for Question 20 is 3 marks)

21 Here is a sketch of a curve.



(5)

The equation of the curve is $y = x^2 + ax + b$ where a and b are integers.

The points (0, -6) and (1, 0) lie on the curve.

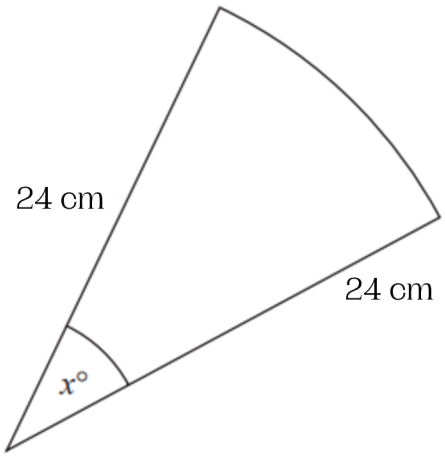
Find the coordinates of the turning point of the curve.

(..... , ...)

(4)

(Total for Question 21 is 4 marks)

22 The diagram shows a sector of a circle of radius 24 cm.



The length of the arc is 4πcm.
Work out the value of x.

x = ...

(3)

(Total for Question 22 is 3 marks)

23 Sarah has 12 cards.

She has:

- 4 red cards
- 5 yellow cards
- 3 blue cards

Sarah randomly selects 2 cards from the 12 cards.
What is the probability that the two cards she selects are of different colours?

.....

(Total for Question 23 is 3 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

24 Solve the simultaneous equations

$3x + 2y = 12$
$4x + 2y = 8$

x = ...

y = ...

(Total for Question 24 is 4 marks)

25 The points P(-1,2), Q(5,6), and R(3,m) are the vertices of a right-angled triangle.
Angle PQR is the right angle.

Find an equation of the line that passes through points P and R.
Give your answer in the form ay+bx=c, where a, b, and c are integers.

.....

(Total for Question 25 is 5 marks)

TOTAL FOR PAPER IS 80 MARKS