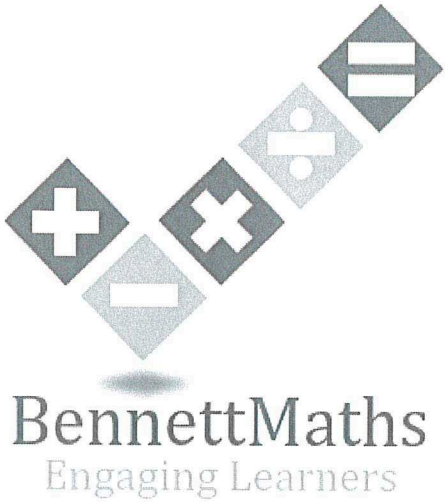
Solutions available at www.bennettmaths.com
@BennettMaths on TikTok and YouTube

Candidate surname	Other names



DB Solutions

Best Guess Paper – 3F Calculator

Within this booklet you will find my best guess at what might be on the next edexcel gcse maths paper.

There may be other topics that appear on paper 3, so please ensure that you continue to revise all topics.

The paper consists of 27 questions totalling 80 marks.

1 Round 37.68 to 1 decimal place

37.7

(Total for Question 1 is 1 mark)

2 Write down two factors of 15

3, 5

(Total for Question 2 is 1 mark)

3 Write down the value of the digit 5 in the number 450.98

50

(Total for Question 3 is 1 mark)

4 Simplify

$6a + a - 4a$

3a

(Total for Question 4 is 1 mark)

5 Work out 20% of 180

36

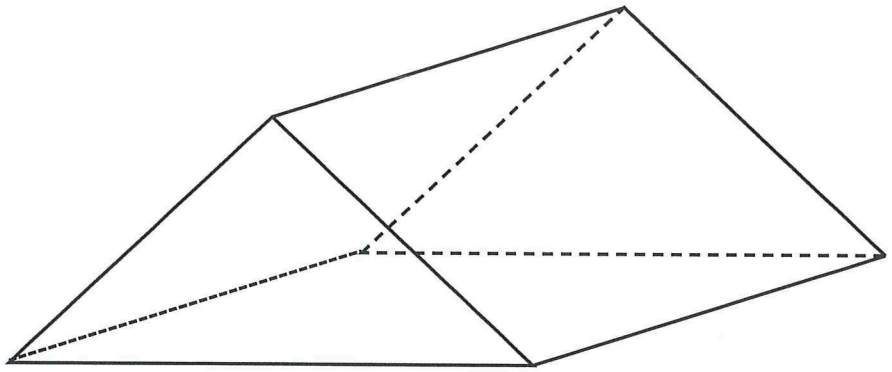
(Total for Question 5 is 1 mark)

6 Solve $\frac{x}{2} = 5.5$

11

(Total for Question 6 is 1 mark)

7(a) Write down the mathematical name of the shape below



Triangular prism

(1)

(b) Using the shape above,

(i) Write down the number of edges

lines 9

(1)

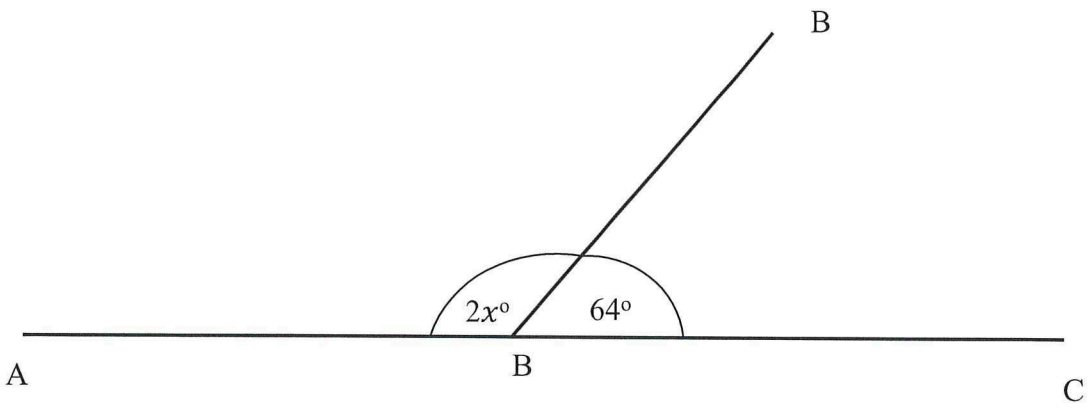
(ii) Write down the number of vertices

corners 6

(1)

(Total for Question 7 is 3 marks)

8 AC and BD are two straight lines.



(i) Work out the value of x

$2x + 64 = 180$

$2x = 116$

$x = 58$

(2)

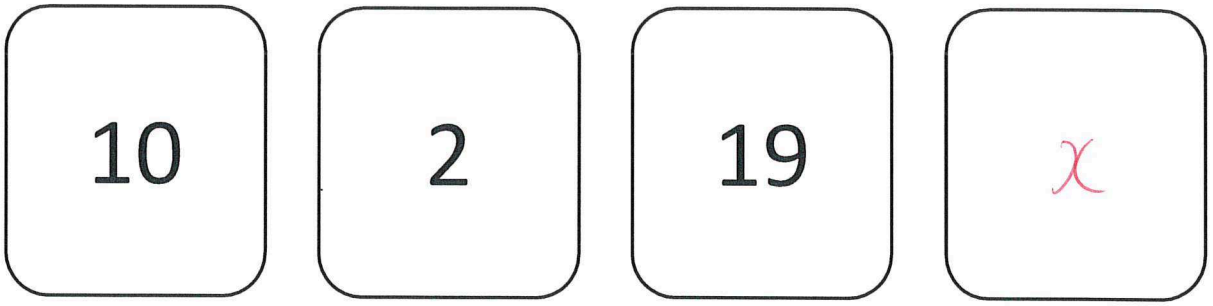
(ii) Give a reason for your answer.

Angles on a Straight line = 180°

(1)

(Total for Question 8 is 3 marks)

9



Four cards have a number written on them. One of the cards is turned over.
The mean average of the four numbers is 7.5.

Write down the number that is on the turned over card.

$7.5 \times 4 = 30$

$10 + 2 + 19 + x = 30$

$x = -1$

(Total for Question 9 is 3 marks)

10(a) Expand $3(2x - 4)$

$6x - 12$

(1)

10(b) Factorise fully $12x + 40y$

$4(3x + 10y)$

(1)

10(c) Simplify $(a^3)^5$

a^{15}

(1)

10(d) Solve $5(x + 8) = -11x$

$5x + 40 = -11x$

$16x + 40 = 0$

$16x = -40$

$x = -2.5$

(3)

(Total for Question 10 is 6 marks)

11 There are red, blue and green counters in a bag.
The ratio of red counters to blue counters to blue counters is 5 : 6 : 7.

Write down the fraction of the counters that are Blue.
Give your answer in its simplest form.

$\frac{6}{5+6+7} = \frac{6}{18} = \frac{1}{3}$

.....

(Total for Question 11 is 2 marks)

---

12 The recipe for 12 cookies is given below

12 Cookies
1kg of flour
800g of butter
500g of sugar

6 cookies
1000g
500g
400g
250g

Amy is going to make 18 cookies.
Work out how much of each ingredient is required.
Give your answers in grams.

flour 1500 g

butter 1200 g

sugar 750 g

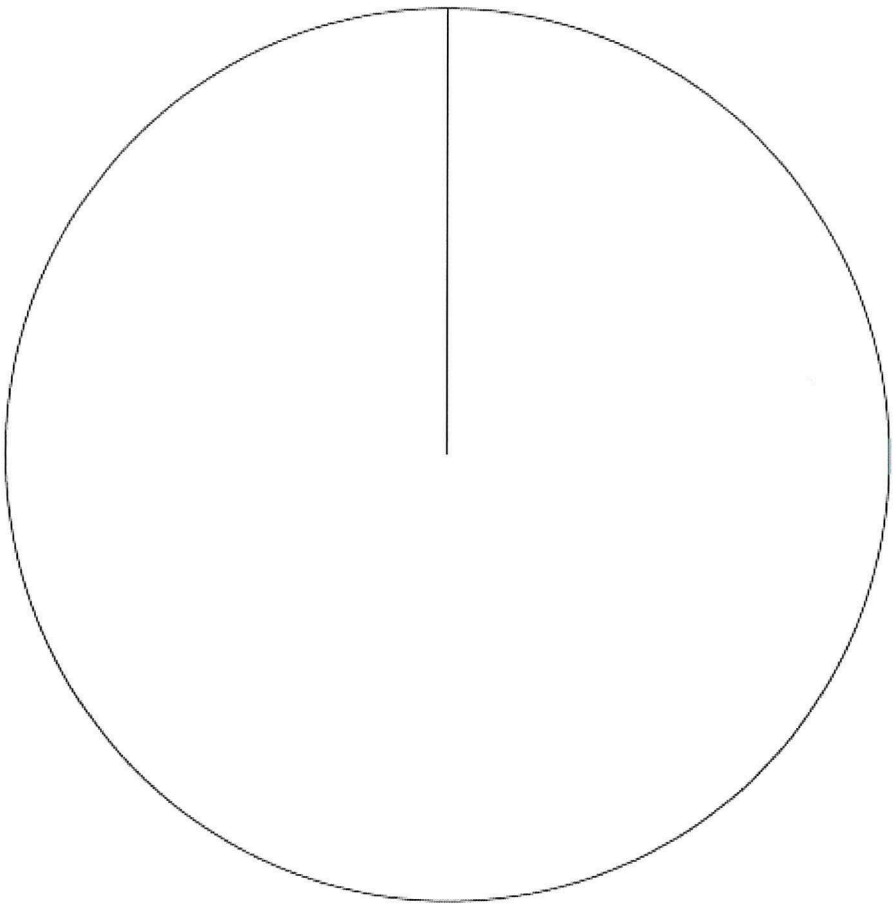
(Total for Question 12 is 3 marks)

13 The frequency table below shows the favourite sport of 45 students

Sport	Frequency	
athletics	13	x 8 = 104
cycling	17	x 8 = 136
swimming	8	x 8 = 64
gymnastics	7	x 8 = 56
	45	

360 ÷ 45 = 8

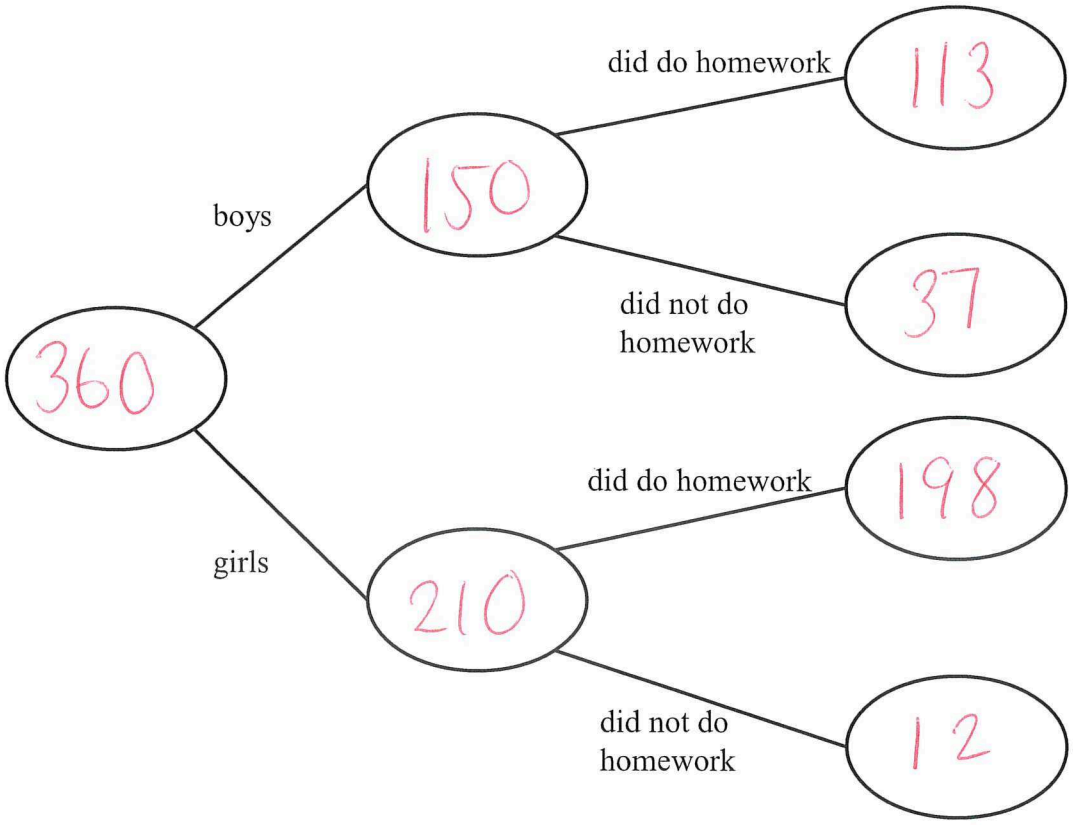
Draw an accurate pie chart to represent this information



(Total for Question 13 is 3 marks)

14 360 students have some homework.
150 of the students were boys.
12 of the 49 students that did not do their homework were girls.

(a) Use this information to complete the frequency tree.



(3)

14(b) One of the girls is chosen at random.
Write down the probability that they did do their homework

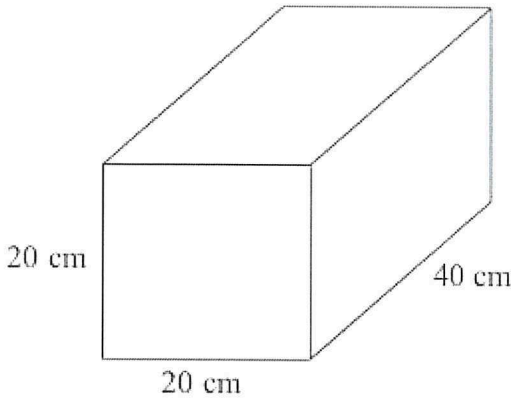
$\frac{198}{210}$

.....

(2)

(Total for Question 14 is 5 marks)

15 Below is a cuboid

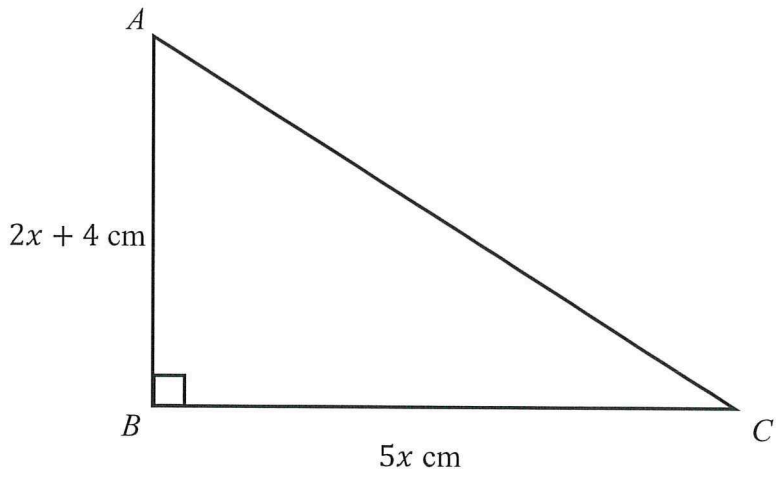


Work out the volume of the shape above stating your units.

$20 \times 20 \times 40 = 16000 cm^3$

(Total for Question 15 is 3 marks)

16 ABC is a right-angled triangle.
$AB = 2x + 4$ cm
$BC = 5x$ cm



(a) Work out the area of the triangle.
Giving your answer in the form $ax^2 + bx$ cm^2. Where a and b are integers

$\frac{5x(2x+4)}{2} = \frac{10x^2 + 20x}{2} = 5x^2 + 10x$

..... cm^2

(3)

(b) The area of another shape is $4x^2 + 6x$.
If the value of x is 3.
Work out the value of the area of this shape.

$4(3)^2 + 6(3)$

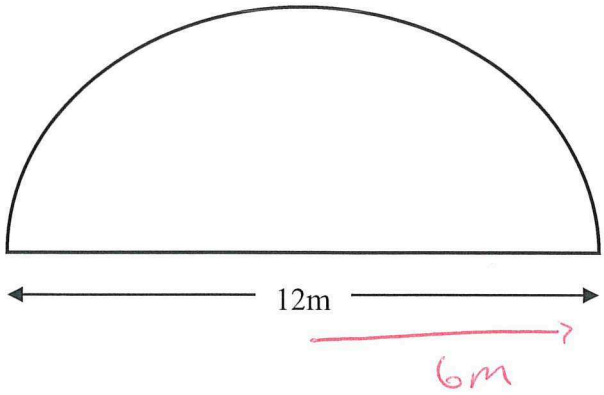
$36 + 18 = 54$

.....

(2)

(Total for Question 16 is 5 marks)

17 Mr Scott's garden is in the shape of a semi-circle.
The diameter of the semi-circle is 12 metres.



He is going to cover 46% of the garden with flowers.

The remainder of the garden will be covered with grass seeds $100-46=54$

A box of grass seeds covers $4m^2$ and costs £5.99

Work out the total cost of the grass seeds to cover the remainder of his garden.

$\frac{\pi \times r^2}{2} = \frac{\pi \times 6^2}{2} = 18\pi m^2$

$54\% \times \text{of } 18\pi m^2 = 30.54 m^2$

$\frac{30.54}{4} = 7.6$ (8 boxes)

$8 \times 5.99 = £47.92$

£ .....

(Total for Question 17 is 5 marks)

18(a) Convert 3.45×10^4 into an ordinary number

34500

(1)

18(b) Convert 0.00672 into standard form

6.72×10^{-3}

(1)

18(c) Work out the value of

$$\frac{(1.3 \times 10^4) + (6.6 \times 10^3)}{(2.45 \times 10^2)}$$

Giving your answer in standard form

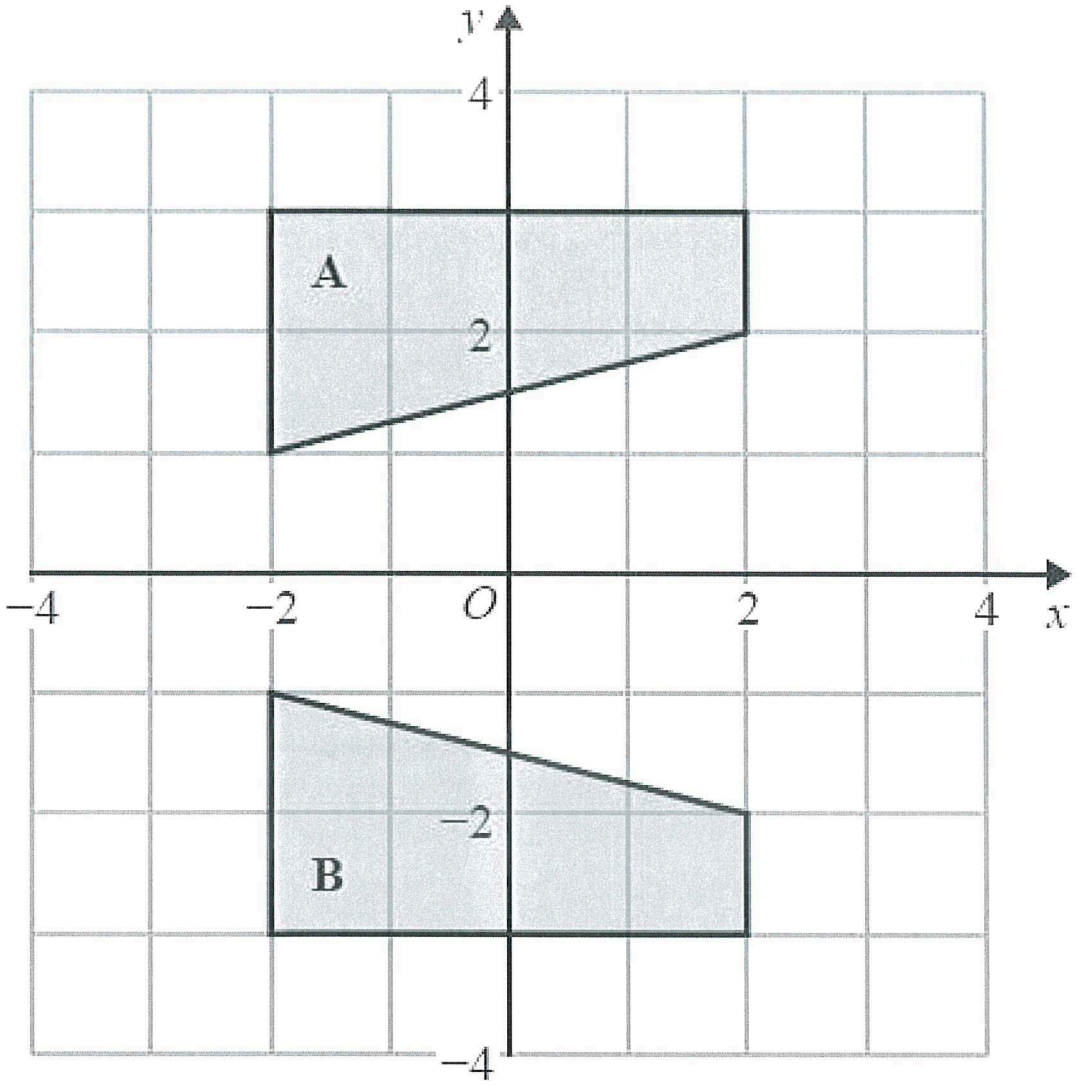
80

8×10^1

(2)

(Total for Question 18 is 4 marks)

19



Describe fully the single transformation that maps Shape A onto Shape B.

Reflection in x-axis

(Total for Question 19 is 2 marks)

20 The exchange rate for pound sterling to euros is 1 : 1.17

Charlotte is going to travel to Spain, that uses the Euro currency. She wants to convert £350 into Euros.

(a) Work out the amount of Euros that Charlotte will receive.

£ : €
1 : 1.17
×350 ↙ 350 : 409.5 ↘ ×350

€409.50

(2)

(b) The exchange increases to 1 : 1.18. How will this affect the answer to part (a)

Charlotte will receive more Euros

(1)

(Total for Question 20 is 3 marks)

---

21 Make x the subject of the formula

$$y = x^2 - 3p$$

+3p +3p

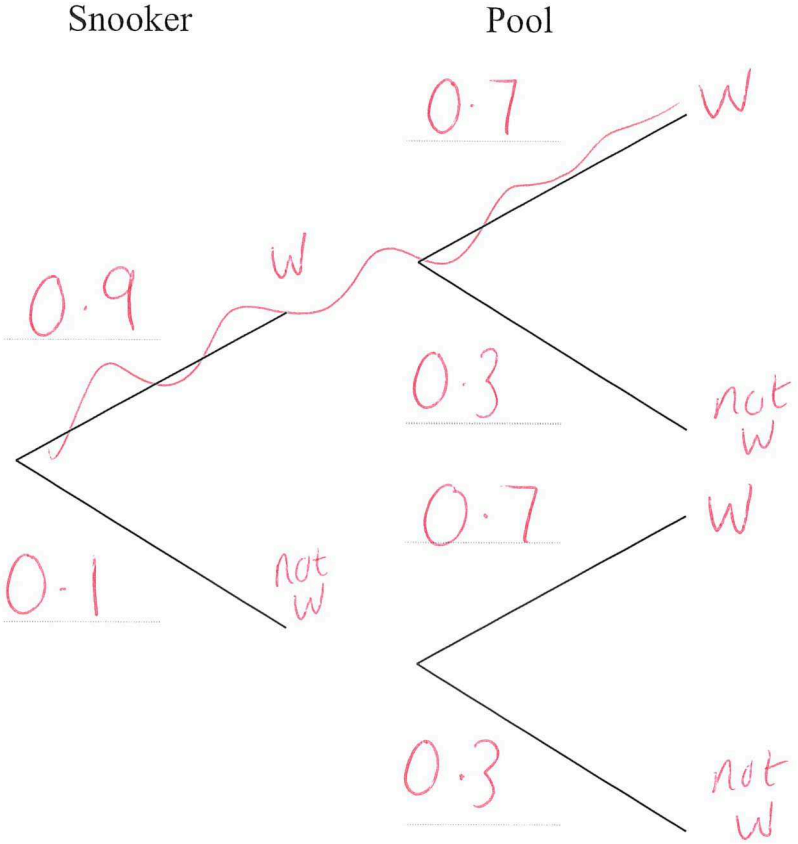
$y + 3p = x^2$

$\sqrt{}$ $\sqrt{}$

$\sqrt{y+3p} = x$

(Total for Question 21 is 2 marks)

22(a) Margot is going to play one game of snooker and one game of pool.
The probability that Margot wins a game of snooker is 0.9.
The probability that Margot does not win a game of pool is 0.3.



(2)

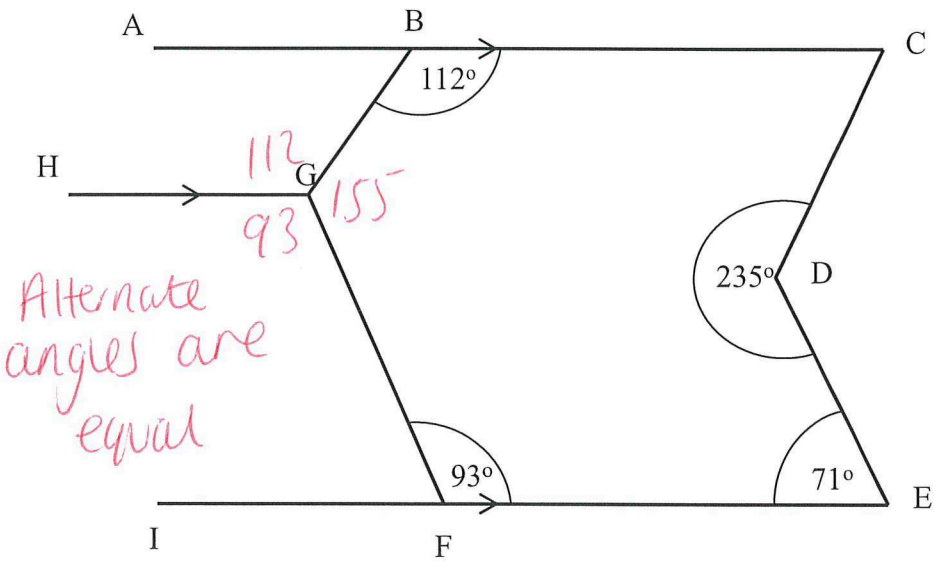
22(b) Work out the probability that Margot wins at both snooker and pool.

$0.9 \times 0.7 = 0.63$

(2)

(Total for Question 22 is 4 marks)

23 Shape BCDEFG is an irregular hexagon.
Lines AC, HG & IE are parallel.



112
93
155

Alternate angles are equal

Work out the size of angle BCD

$(n-2) \times 180$

$(6-2) \times 180$

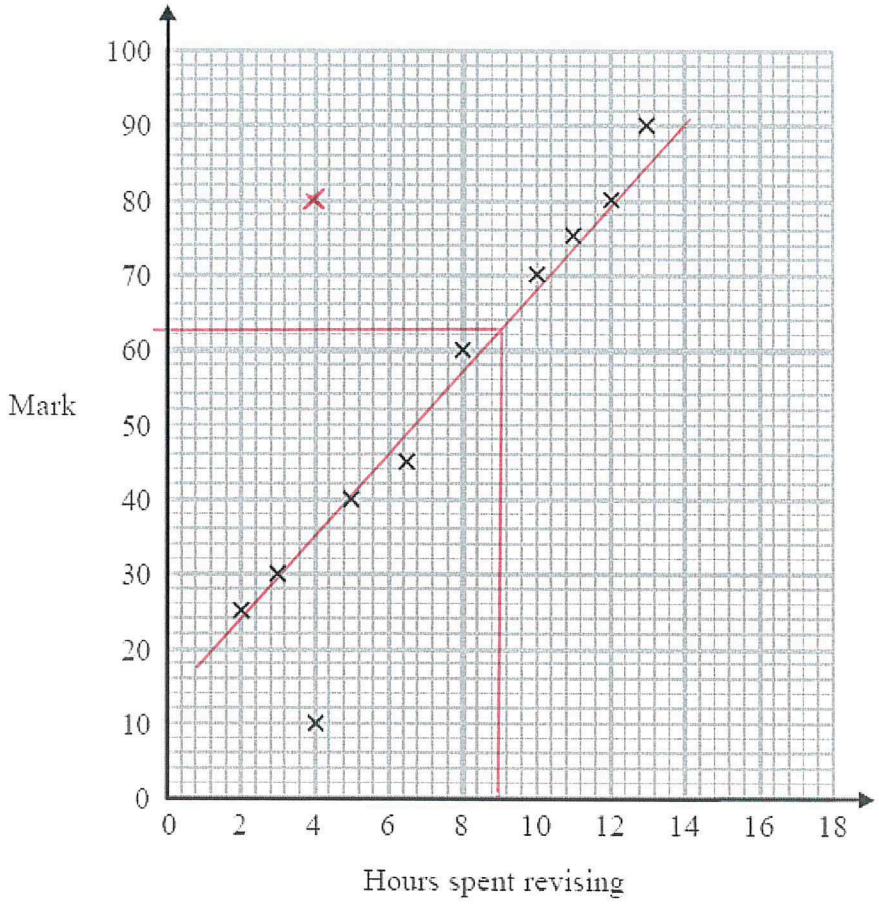
4×180

$= 720$

$720 - 112 - 155 - 93 - 71 - 235 = 54°$

(Total for Question 23 is 5 marks)

24 The scatter shows the maths scores attained by some students in Year 11.



24(a) Daisy scored 80 marks after revising for 4 hours.
Plot this information on the scatter graph

(1)

24(b) Sadie revised for 9 hours. Work out an estimate for the mark she would achieve

63

(2)

24(c) Daphne says that using the graph to estimate the mark achieved for somebody spending 18 hours revising would not be appropriate. Explain why?

18 hours is not within the data set.

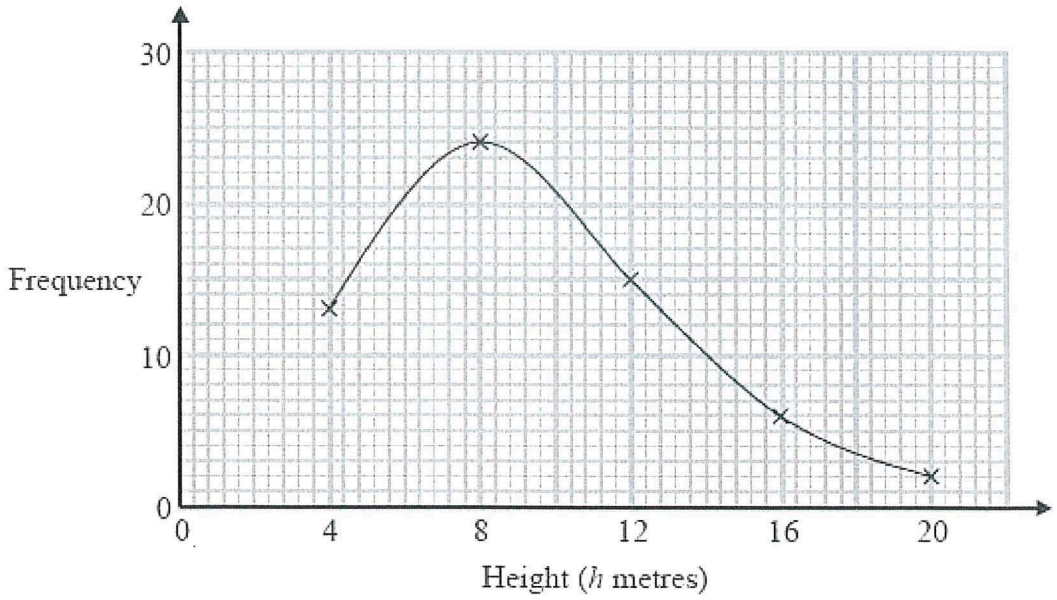
(1)

(Total for Question 24 is 4 marks)

25 The table shows the heights of 60 trees

Height (h metres)	Frequency
$0 < h \leqslant 4$	13
$4 < h \leqslant 8$	24
$8 < h \leqslant 12$	15
$12 < h \leqslant 16$	6
$16 < h \leqslant 20$	2

Freddie plots the frequency polygon below



Write down 2 things that are wrong with this graph

1. He has used the end point rather than the midpoint
2. The lines should be straight not a curve

(Total for Question 25 is 2 marks)

26(a) Simplify fully

$$(4a^4bc^{-3})^5$$

$4^5 = 1024$
$(a^4)^5 = a^{20}$
$(b)^5 = b^5$
$(c^{-3})^5 = c^{-15}$

$1024a^{20}b^5c^{-15}$

(2)

26(b) Expand and simplify

$$3(2x+4) - 2(x-1)$$

$6x + 12 - 2x + 1$

$4x + 13$

(2)

26(c) Factorise fully

$$4x^2y^3 + 6x^3y$$

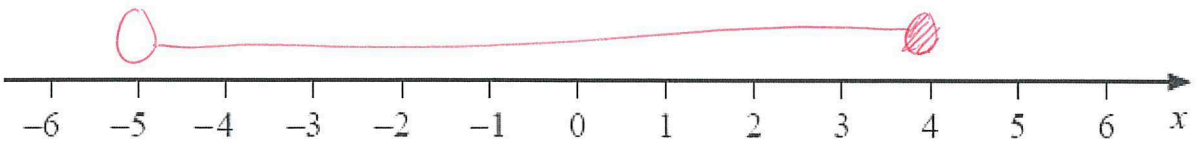
$2x^2y(2y^2 + 3x)$

(2)

26(d) Express on the number line

$$-4 < x + 1 \leq 5$$

$-1 \quad -1 \quad -1$
$-5 < x \leq 4$



(2)

(Total for Question 26 is 8 marks)

27 A number, n, is rounded to 2 significant figures.
The result is 26.
Complete the error interval for n

± 0.5

$25.5 \leq n < 26.5$

(Total for Question 27 is 2 marks)