

1MA0/1F

# Edexcel GCSE

Mathematics (Linear) – 1MA0  
Practice Paper 1F (Non-Calculator)



Set A

## Foundation Tier

Time: 1 hour 45 minutes

**Materials required for examination**

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

**Items included with question papers**

Nil

### Instructions

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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 must not be used.

### Information

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The total mark for this paper is 100.

The marks for each question are shown in brackets – use this as a guide as to how much time to spend on **each** question.

Questions labelled with an **asterisk** (\*) are ones where the quality of your written communication will be assessed – you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.

### Advice

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Read each question carefully before you start to answer it.

Keep an eye on the time.

Try to answer every question.

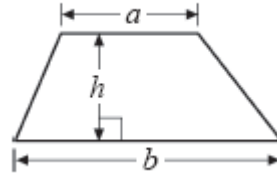
Check your answers if you have time at the end.

## GCSE Mathematics 1MA0

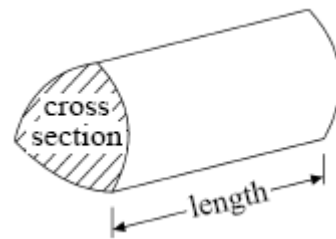
Formulae: Foundation Tier

**You must not write on this formulae page.  
Anything you write on this formulae page will gain NO credit.**

**Area of trapezium** =  $\frac{1}{2}(a + b)h$



**Volume of prism** = area of cross section  $\times$  length



Answer ALL TWENTY FOUR questions

Write your answers in the spaces provided.

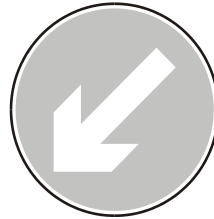
You must write down all the stages in your working.

You must NOT use a calculator.

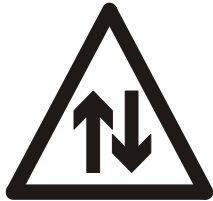
1. Here are four road signs.



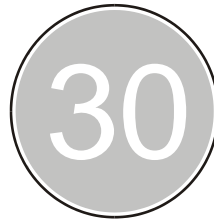
A



B



C



D

**Two** of these road signs have one line of symmetry.

(a) Write down the letters of each of these **two** road signs.

..... and .....  
(2)

Only **one** of these four road signs has rotational symmetry.

(b) (i) Write down the letter of this road sign.

.....

(ii) Write down its order of rotational symmetry.

.....  
(2)

(Total 4 marks)

2. (a) Measure the length of the line.



(2)

The line is to be the **diameter** of a circle.

- (b) Mark the centre of the circle with a cross.

(1)

- (c) Draw the circle.

(1)

**(Total 4 marks)**

---

3.

Pete's Café	
Menu List	
Cup of Tea	75p
Cup of Coffee	85p
Can of Cola	75p
Roll	£1.70
Sandwich	£1.35

Joe buys a can of cola and a roll.

(a) Work out the total cost.

£.....  
(1)

Susan buys **two** cups of tea and **one** sandwich,

(b) Work out the total cost.

£.....  
(2)

Kim buys a cup of coffee and a roll.

She pays with a £5 note.

(c) How much change should she get?

£.....  
(2)

**(Total 5 marks)**

4. Fiona has four cards.  
Each card has a number written on it.



Fiona puts all four cards on the table to make a number.

- (a) (i) Write the numbers on the cards to show the smallest number Fiona can make with the four cards.

Four empty square boxes are arranged in a horizontal row, intended for the student to write the digits of the smallest number possible.

- (ii) Write the numbers on the cards to show the largest number Fiona can make with the four cards.

Four empty square boxes are arranged in a horizontal row, intended for the student to write the digits of the largest number possible.

(2)

Fiona uses the cards to make a true statement.

- (b) Write the number on the cards to make this true.  
Use each of Fiona's cards **once**.

$$\square + \square - \square = \square$$

(2)

A fifth card is needed to show the result of the multiplication  $6734 \times 10$ . She needs a fifth card.

- (c) Write the number that should be on the fifth card.

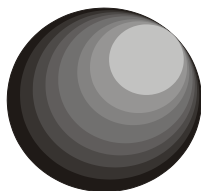
A single empty square box is centered below the text, intended for the student to write the result of the multiplication  $6734 \times 10$ .

(1)

(Total 5 marks)

5. Write down the mathematical name for each of these three different 3-D shapes.

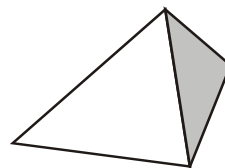
(i)



(ii)



(iii)



(i) .....

(ii) .....

(iii) .....

**(Total 3 marks)**

---

6. (a) Simplify

(i)  $c + c + c + c + c$

.....

(ii)  $p \times p \times p$

.....

(iii)  $2g + 5g$

.....

(iv)  $2r \times 3p$

.....

**(4)**

(b) Expand

$5(y - 3)$

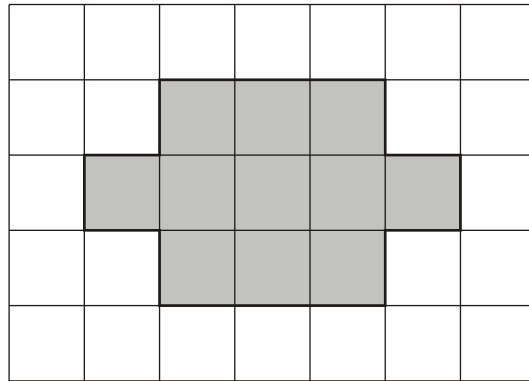
.....

**(1)**

**(Total 5 marks)**

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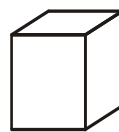
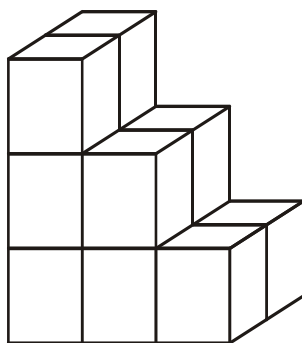
7. A shaded shape has been drawn on the centimetre grid.



(a) Find the perimeter of the shaded shape.

..... cm  
(1)

(b) Find the volume of this prism.



represents 1 cm<sup>3</sup>

Diagram **NOT**  
accurately drawn

.....cm<sup>3</sup>

(2)

(Total 3 marks)



8. Daniel carried out a survey of his friends' favourite flavour of crisps.

Here are his results.

Plain	Chicken	Bovril	Salt & Vinegar	Plain
Salt & Vinegar	Plain	Chicken	Plain	Bovril
Plain	Chicken	Bovril	Salt & Vinegar	Bovril
Bovril	Plain	Plain	Salt & Vinegar	Plain

\*(a) Show this information in a diagram.

**(3)**

(b) Write down the number of Daniel's friends whose favourite flavour was Salt & Vinegar.

.....  
**(1)**

(c) Which was the favourite flavour of most of Daniel's friends?

.....  
**(1)**

**(Total 5 marks)**

9. Here are some fractions.

$$\frac{2}{8} \quad \frac{3}{10} \quad \frac{4}{16} \quad \frac{5}{20} \quad \frac{8}{24}$$

(a) Which two of the fractions are not equivalent to  $\frac{1}{4}$ ?

You must show your working.

..... and .....

**(3)**

\*(b) Here are two fractions  $\frac{3}{5}$  and  $\frac{2}{3}$ .

Explain which is the larger fraction.


**(3)**

**(Total 6 marks)**

10. Here is part of a train timetable from Crewe to London.

Station	Time of Leaving
Crewe	08 00
Wolverhampton	08 40
Birmingham	09 00
Coventry	09 30
Rugby	09 40
Milton Keynes	10 10

(a) At what time should the train leave Coventry?

.....  
(1)

The train should arrive in London at 10 45

(b) How long should the train take to travel from Crewe to London?

.....  
(2)

Verity arrived at Milton Keynes station at 09 53

(c) How many minutes should she have to wait before the 10 10 train leaves?

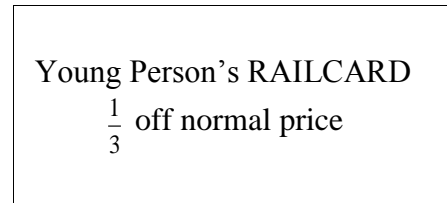
..... minutes  
(1)

Lisa uses her railcard to buy a ticket.

She gets  $\frac{1}{3}$  off the normal price of the ticket.

The normal price of the ticket is £24.90

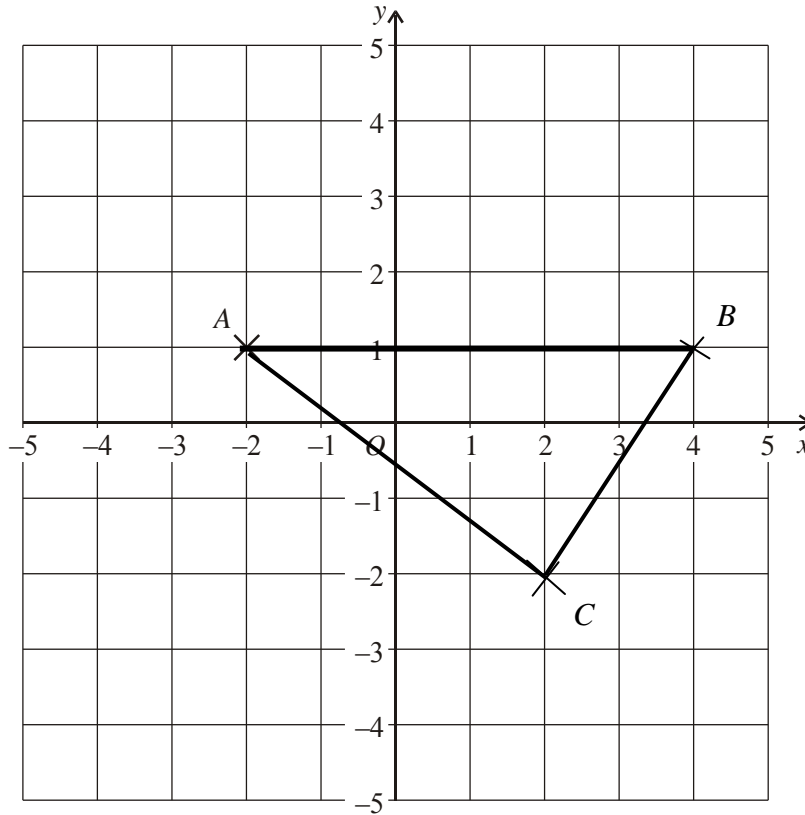
(d) Work out how much Lisa pays for the ticket.



£ .....  
(3)

**(Total 7 marks)**

11.  $A$ ,  $B$  and  $C$  are three points on a centimetre grid.



(a) Write down the coordinates of the point  $B$ .

(....., .....)  
**(1)**

(b) Write down the coordinates of the mid-point of  $BC$ .

(....., .....)  
**(1)**

(c) Find the area of triangle  $ABC$ .

.....  $\text{cm}^2$   
**(2)**

**(Total 4 marks)**

12. Jo planted some bulbs in October. She was given this table at her local garden centre.

The ticks in the table show the months in which each type of bulb grows into flowers.

		Month					
		Jan	Feb	March	April	May	June
Type of bulb	Allium					✓	✓
	Crocus	✓	✓				
	Daffodil		✓	✓	✓		
	Iris	✓	✓				
	Tulip				✓	✓	

(a) In which months do tulips flower?

..... (1)

(b) Which type of bulb flowers in March?

..... (1)

(c) In which month do most types of bulb flower?

..... (1)

(d) Which type of bulb flowers in the same months as the iris?

..... (1)

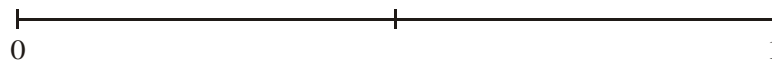
Jo puts one of each type of these bulbs in a bag.

She takes a bulb from the bag without looking.

(e) (i) Write down the probability that she will take a crocus bulb.

.....

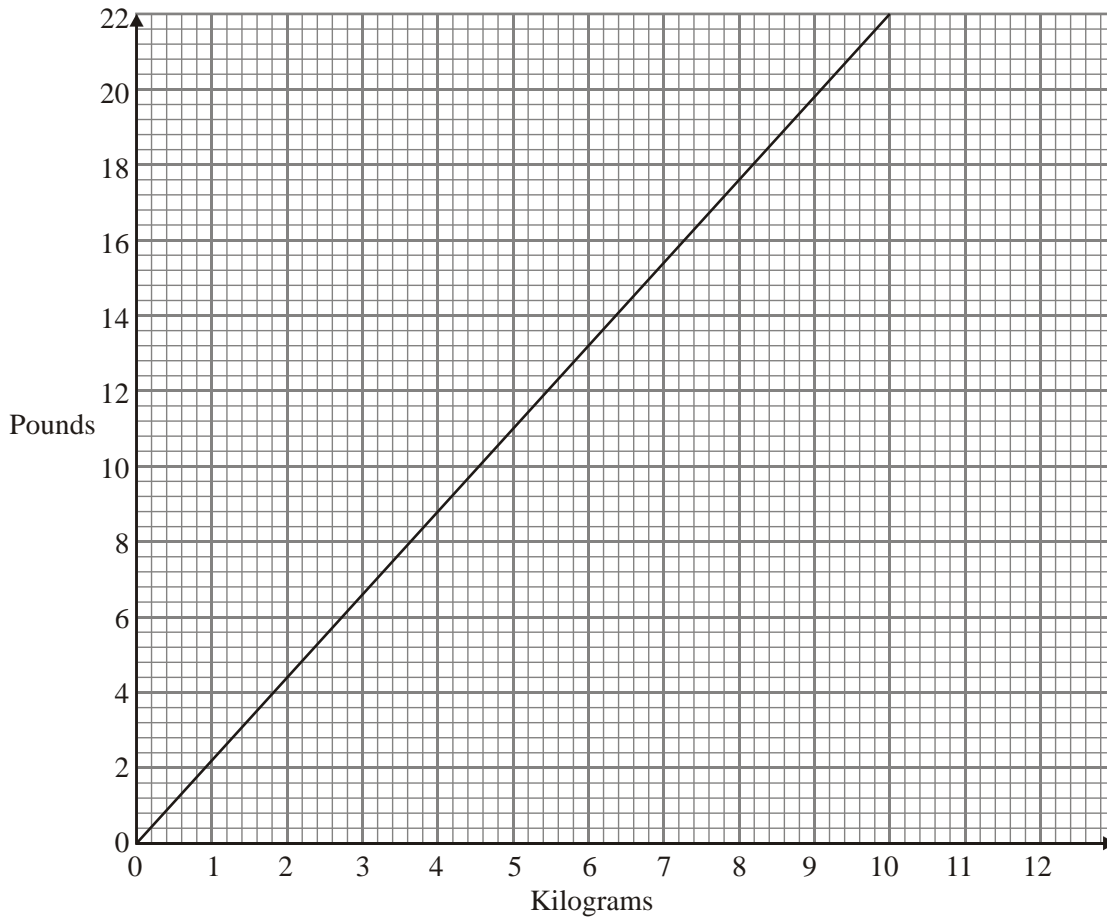
(ii) On the probability scale, mark with a cross (×) the probability that she will take a bulb which flowers in February.



(2)

(Total 6 marks)

13.



The conversion graph above can be used for changing between kilograms and pounds.

(a) Use the graph to change 2.5 kilograms to pounds.

..... pounds

**(1)**

Alfie weighs 10 stone and 4 pounds.  
He needs to know his weight in kilograms.

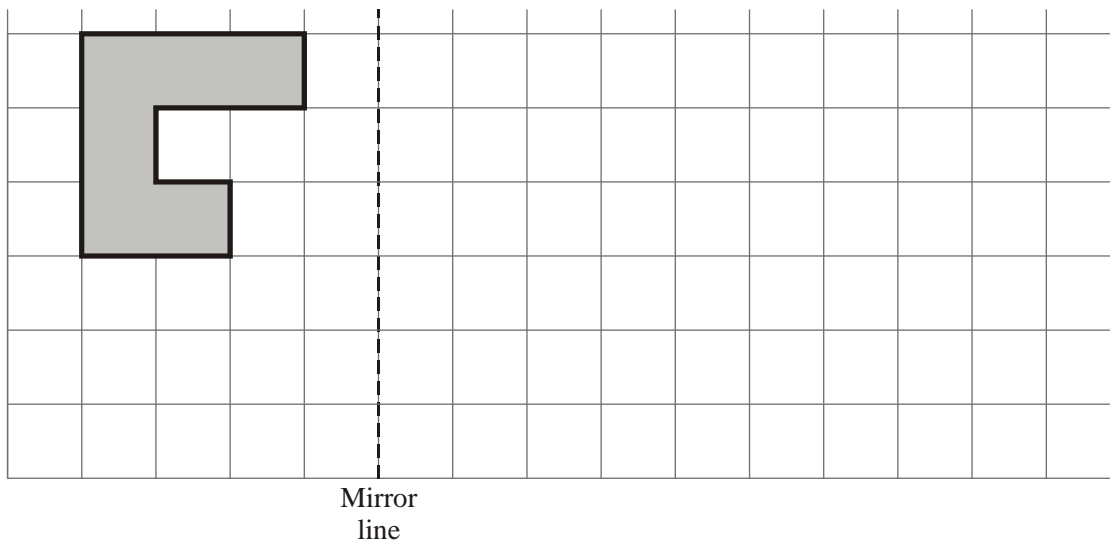
(b) If 1 stone = 14 pounds, estimate Alfie's weight in kilograms.

..... kilograms

**(3)**

**(Total 4 marks)**

14. A shaded shape is shown on the grid of centimetre squares.



Reflect the shaded shape in the mirror line.

**(Total 2 marks)**

15. (a) Simplify  $5p + 2q + 3p + 3q$

.....  
(2)

$y = 4x - 3$

(b) Find the value of  $y$  when  $x = 2$

$y =$  .....  
(2)

**(Total 4 marks)**

16. The table shows the top 10 football teams in the Premiership in 2010.

	<b>Played</b>	<b>W</b>	<b>D</b>	<b>L</b>	<b>Points</b>
<b>Chelsea</b>	38	27	5	6	86
<b>Man Utd</b>	38	27	4	7	
<b>Arsenal</b>	38	23	6	9	
<b>Tottenham</b>	38	21	7	10	
<b>Man City</b>	38	18	13	7	
<b>Aston Villa</b>	38	17	13	8	64
<b>Liverpool</b>	38	18	9	11	63
<b>Everton</b>	38	16	13	9	61
<b>Birmingham</b>	38	13	11	14	50
<b>Blackburn</b>	38	13	11	14	50

The table shows that each team played 38 games.

For each team, it shows the number of games won (W), the number of games drawn (D), and the number of games lost (L).

It also shows the total number of points some of the teams got. The total points for the other teams has been hidden.

You can use this rule to work out the total number of points a team got.

Multiply the number of wins by 3 and then add the number of draws
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How many more points did Man Utd get than Man City in 2010?

.....  
**(Total 3 marks)**



17. 56 students were asked if they watched tennis yesterday.  
20 of the students are boys.  
17 girls watched tennis yesterday.  
32 students did not watch tennis yesterday

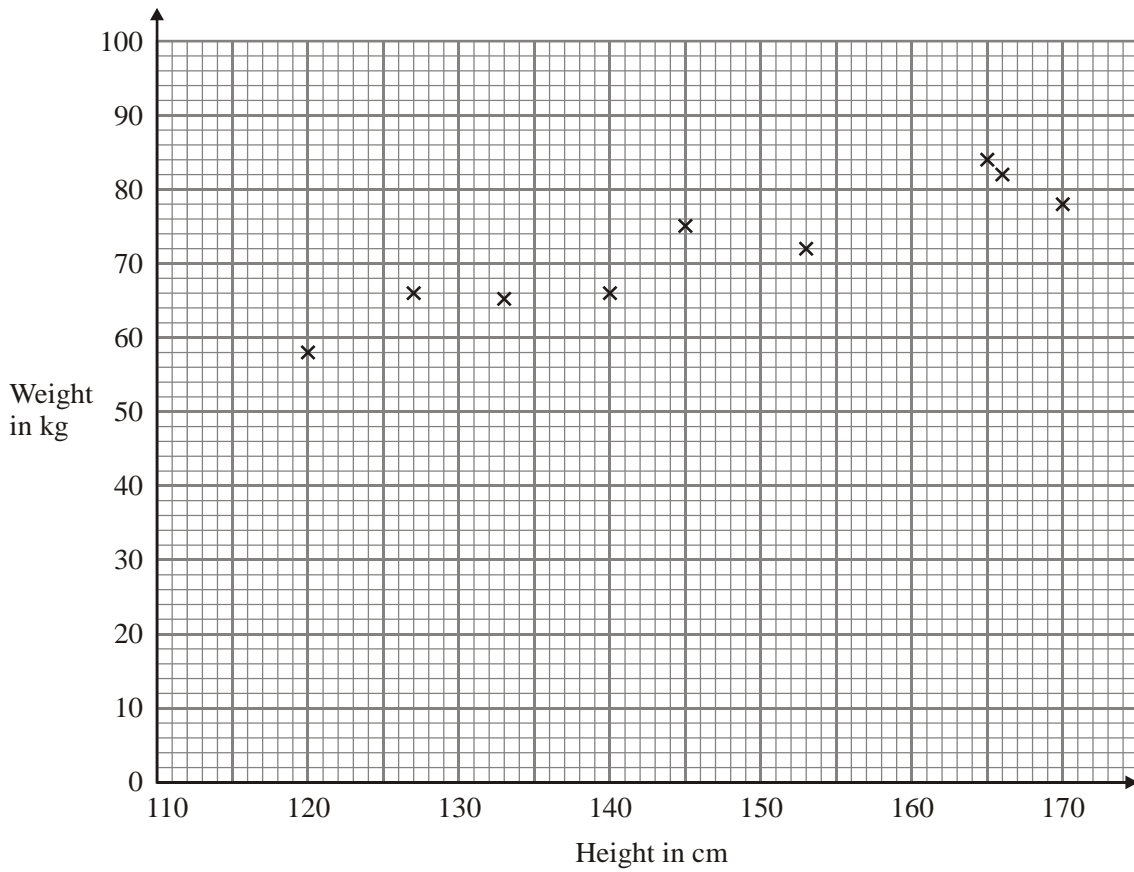
One of these students is to be chosen at random.

Write down the probability that the student chosen will be a boy who watched tennis yesterday.  
Give your answer as a fraction in its simplest form.

.....  
**(Total 4 marks)**

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18. The scatter graph shows information about the height and the weight for nine students.



The table shows the height and the weight for three more students.

Height in cm	135	155	170
Weight in kg	70	75	85

(a) On the scatter graph, plot the information from the table.

(1)

(b) What type of correlation does this scatter graph show?

.....

(1)

(c) The weight of another student is 80 kg.

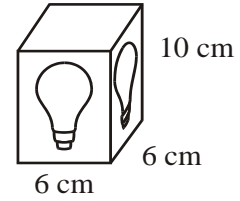
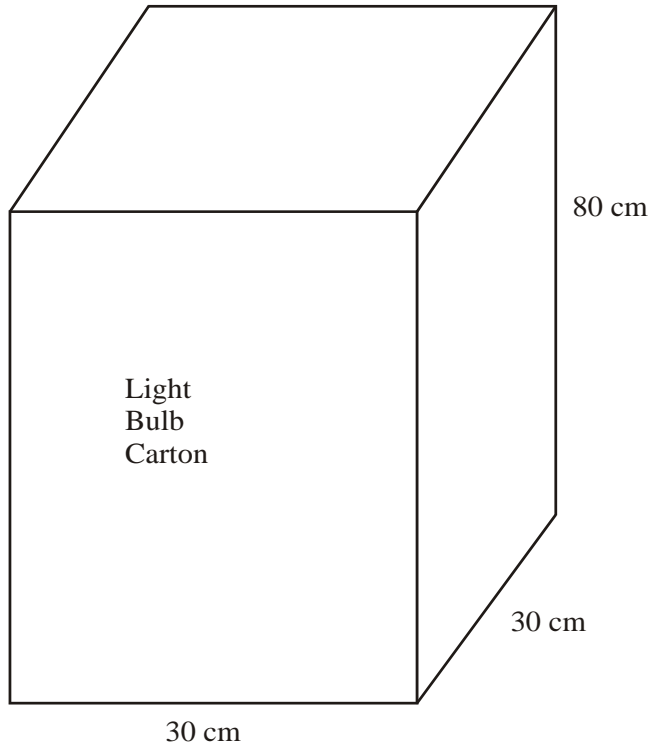
Estimate the height of this student.

.....cm

(2)

(Total 4 marks)

19.



Diagrams **NOT** accurately drawn

A light bulb box measures 6 cm by 6 cm by 10 cm.  
Light bulb boxes are packed into cartons.  
A carton measures 30 cm by 30 cm by 80 cm.

Work out the number of light bulb boxes which can completely fill **one** carton.

.....  
(Total 3 marks)

**\*20.** The manager of a department store has made some changes.  
She wants to find out what people think of these changes.

She uses this question on a questionnaire.

"What do you think of the changes in the store?"

Excellent

Very good

Good

(a) Write down what is wrong about this question.

.....  
.....  
.....

**(1)**

This is another question on the questionnaire.

"How much money do you normally spend in the store?"

A lot

Not much

(b) Write down one thing that is wrong with this question.

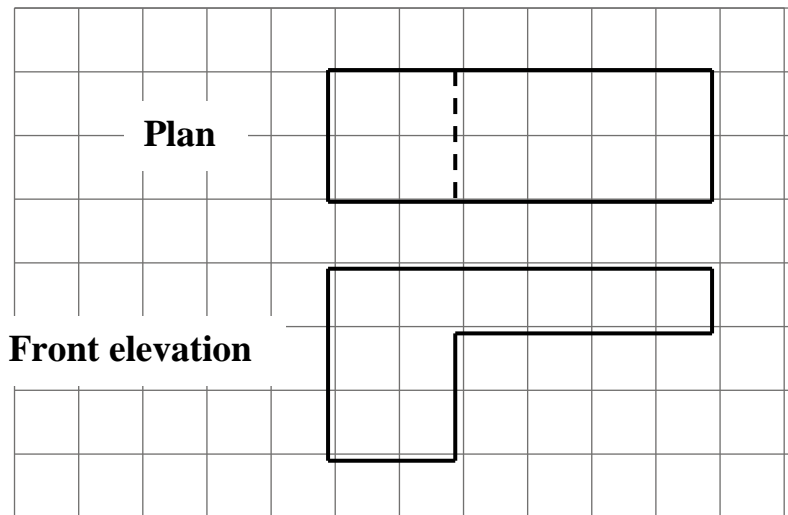
.....  
.....  
.....

**(1)**

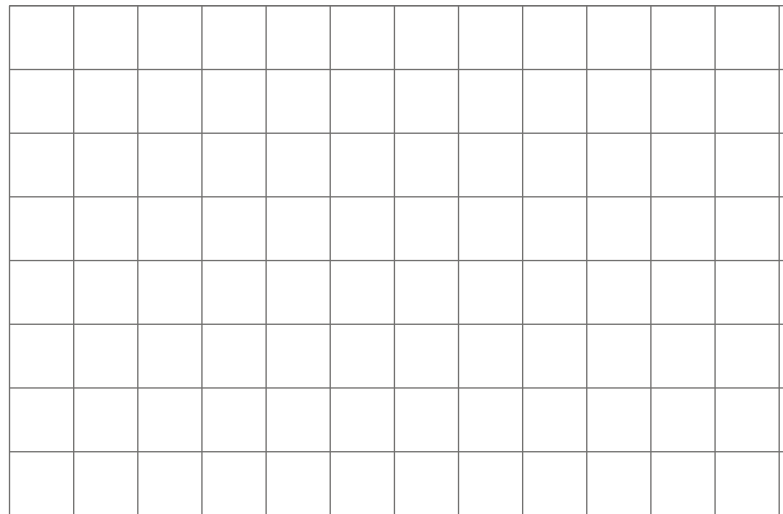
**(Total 2 marks)**

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21. Here are the plan and front elevation of a prism.  
The front elevation shows the cross section of the prism.



- (a) On the grid below, draw a side elevation of the prism.



(2)

- (b) In the space below, draw a 3-D sketch of the prism.

(2)

(Total 4 marks)

\*22. Samantha wants to buy a new pair of trainers.

There are 3 shops that sell the trainers she wants.

<p><b>Sports '4' All</b></p> <p><b>Trainers</b></p> <p><b>£5</b></p> <p>plus</p> <p>12 payments of £4.50</p>	<p><b>Edexcel Sports</b></p> <p><b>Trainers</b></p> <p><math>\frac{1}{5}</math> off</p> <p>usual price of</p> <p><b>£70</b></p>	<p><b>Keef's Sports</b></p> <p><b>Trainers</b></p> <p><b>£50</b></p> <p>plus</p> <p>VAT at 20%</p>
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From which shop should Samantha buy her trainers to get the best deal?

You must show all of your working.

**(Total 5 marks)**

23. Stuart and Helen play a game with red and blue cards.

Red cards are worth 4 points each.

Blue cards are worth 1 point each.

Stuart has  $r$  red cards and  $b$  blue cards.

Helen has 2 red cards and twice as many blue cards as Stuart.

The total number of points of Stuart and Helen's cards is  $T$ .

Write down, in terms of  $r$  and  $b$ , a formula for  $T$

.....  
**(Total 4 marks)**

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24. The table gives information about an estate agent's charges for selling a house.

<b>Value of the house</b>	<b>Estate agent's charges</b>
Up to £60 000	2% of the value of the house
Over £60 000	2% of the first £60 000 plus 1% of the remaining value of the house

Ken uses this estate agent to sell his house.

The estate agent sold Ken's house for £80 000.

Work out the total charge that Ken will have to pay.

£.....  
(Total 4 marks)

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**TOTAL FOR PAPER: 100 MARKS**

**END**




Question	Working	Answer	Mark	Notes
1(a)		B, D	2	B2 for B and D (B1 for B or D)
1(b)(i) (ii)		A 3	2	B1 cao B1 cao
2(a)		5.8 cm, 58 mm	2	B1 for 5.8 or 58 B1 for cm or mm
2(b)		Diagram	1	B1 for a cross $\pm 2$ mm
2(c)			1	B1 for a correct circle, radius within $\pm 2$ mm
3(a)	$0.75 + 1.70$	2.45	1	B1 cao
3(b)	$0.75 \times 2 + 1.35$	2.85	2	M1 for $0.75 \times 2 + 1.35$
3(c)	$5 - (0.85 + 1.70)$	2.45	2	A1 cao M1 for $5 - (0.85 + 1.70)$ A1 cao
4(a)(i) (ii)		3467 7643	2	B1 cao B1 cao
4(b)	$? + ? = ? + ?$	Eg. $7 + 3 - 6 = 4$	2	M1 for attempt to rearrange to give 2 sums A1 for a correct statement
4(c)		0	1	B1 cao
5 (i) (ii) (iii)		Sphere Cylinder pyramid	3	B1 cao B1 cao B1 cao



Question	Working	Answer	Mark	Notes
10(a) 10(b)		09 30 2h 45min	1 2	B1 cao M1 for 10 45 – 08 00 A1 for 2h 45min oe
10(c) 10(d)	24.90 – (24.90 ÷ 3)	17 16.60	1 3	B1 cao M1 for 24.90 ÷ 3 M1 for 24.90 – ‘8.30’ A1 cao
11(a) 11(b) 11(c)		(4, 1) (3, -0.5) 9	1 1 2	B1 cao B1 cao M1 for $\frac{1}{2} \times 6 \times 3$ oe A1 cao
12(a) 12(b) 12(c) 12(d) 12(e)(i) (ii)		April, May Daffodil Fevruary Crocus 1/5 diagram	1 1 1 1 2	B1 cao B1 cao B1 cao B1 cao B1 cao B1 for a cross beyond the mid-point
13(a)		5.5 to 5.8 62 to 68	1 3	B1 for answer in the range 5.5 to 5.8 B1 for $14 \times 10 + 4 (= 144)$ M1 for taking a reading from the graph and using it to find the equivalence of ‘144’ A1 for answer in the range 62 to 68
14		Reflection	2	B2 for a fully correct reflection (B1 for reflection in the wrong line or a reflection of a part of the shape in the given mirror line)

Question	Working	Answer	Mark	Notes
15(a)		$8p + 5q$	2	B2 for $8p + 5q$ oe (B1 for $8p$ or $5q$ oe)
15(b)		5	2	M1 for $4 \times 2 - 3$ A1 cao
16	$(27 \times 3 + 4) - (18 \times 3 + 13)$ $= 85 - 67$	18	3	M1 for $27 \times 3 + 4$ or $18 \times 3 + 13$ M1 for $(27 \times 3 + 4) - (18 \times 3 + 13)$ A1 cao
17	$56 - 32 = 24$ watched $14 - 7 = 7$ boys watched $7/56$	$1/8$	4	M1 for $56 - 32 (= 24)$ watched M1 for $14 - 7 (= 7)$ boys watched A1 for $7/56$ A1 ft for $1/8$ (if any cancelling is relevant)
18		Points plotted Positive $155 - 165$	1 1 2	B1 for correct points plotted $\pm 0.5$ square B1 for positive correlation B2 for an answer in the range $155 - 165$ (B1 for a line of best fit drawn if answer outside the range)
19(a) 19(b) 19(c) 19(d)	$30 \times 30 \times 80 \div 6 \times 6 \times 10$ $72000 \div 360$ Or $30 \div 6 \times 30 \div 6 \times 80 \div 10$ $5 \times 5 \times 8$	200	3	M1 for $30 \times 30 \times 80 \div 6 \times 6 \times 10$ Or $30 \div 6 \times 30 \div 6 \times 80 \div 10$ M1 for $72000 \div 360$ Or $5 \times 5 \times 8$ A1 cao

Question	Working	Answer	Mark	Notes
20		Response boxes too vague No time period or vague response boxes	1  1	C1 for a valid explanation  C1 for a valid explanation
21			2  2	B2 cao (B1 for a 2 × 3 rectangle only)  B2 for an accurate 3D sketch (B1 for a 3D sketch with an “L” - shaped cross section)
22	Sports 4 all: $5 + 4.5 \times 12 = \text{£}59$ Edexcel: $70 \times 4/5 = \text{£}56$ Keef's: $50 \times 1.2 = \text{£}60$	Edexcel Sports gives the best deal since $\text{£}56$ is the least cost	5	M1 for $5 + 4.5 \times 12$ M1 for $70 \times 4/5$ M1 for $50 \times 1.2$ A1 for fully correct arithmetic C1 ft for Edexcel Sports supported by ‘correct’ prices
23	Stuart: $r \times 4 + b \times 1 = 4r + b$ Helen: $2 \times 4 + 2b \times 1 = 8 + 2b$	$4r + 3b + 8$	4	M1 for $r \times 4 + b \times 1 (= 4r + b)$ B1 for $2b$ for Helen’s blue cards M1 for $2 \times 4 + 2b \times 1 (= 8 + 2b)$ A1 cao
24	$60000 \times 2/100 = 1200$ $(80000 - 60000) \times 1/100 = 200$ $1200 + 200$	1400	4	M1 for $60000 \times 2/100 (= 1200)$ M1 for $80000 - 60000$ M1 for ‘ $80000 - 60000$ ’ $\times 1/100 (= 200)$ A1 cao

