Paper 2 and Paper 3 Predictions

Edexcel - Foundation
High Chance

Corbettmaths

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

You will need a calculator

Guidance

1. Read each question carefully before you begin answering it.
2. Don't spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings

Revision for this test

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3	Cube numbers and cube roots	212, 214
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5	Fractions, Decimals, Percentages	121 to 129
6	Rounding to Significant Figures	279a
7	Probability	245, 246, 248
8	Perimeter	241
9	Nets	4
10	Faces, Edges, Vertices	5, 3
11	Views and Elevations	354
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13	Area of a Trapezium	48
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20	Forming Expressions	16
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22	Volume of a Cylinder	357
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27	Density	384
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Question	Topic	Video number
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32	Forming and Solving Equations	114
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39	$y = mx + c$	191

1. Write the following numbers in order of size.
Start with the smallest number.

0.42 0.4 0.415 0.48 0.469

0.4, 0.415, 0.42, 0.469, 0.48

(1)

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2. Calculate $\sqrt{62.41}$

7.9

(1)

---

3. 729 is both a square number and a cube number.

Find two other numbers that are both square numbers and cube numbers.

1 and 64

(2)

4. In January a baby elephant weighs 180kg.

By March the weight of the baby elephant had increased by $\frac{3}{8}$.

Work out the weight of the baby elephant in March.

$180 \div 8 = 22.5$

$22.5 \times 3 = 67.5$

$180 + 67.5$

247.5 kg

(3)

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5. Complete the table.

Fraction	Decimal	Percentage
$\frac{17}{20}$	0.85	85%
$\frac{3}{25}$	0.12	12%
$\frac{23}{25}$	0.92	92%

(4)

6.

Holly has worked out the answer to a calculation.

Her teacher has told her to write all her answers to four significant figures.

Round her answer to four significant figures

827.5

(1)

7. A rugby team can win, draw or lose a match.
The table shows the probabilities of each result.

Result	Win	Draw	Lose
Probability	0.4	0.35	

(a) Calculate the missing probability in the table.

$0.4 + 0.35 = 0.75$

0.25

.....

(2)

Each win is worth 2 points.
Each draw is worth 1 point.
Each loss is worth 0 points.
The rugby team plays 20 games in a season.

(b) Work out how many points the rugby team should receive in one season.

$0.4 \times 20 = 8$ wins 16 points
$0.35 \times 20 = 7$ draws 7 points

23 points

.....

(3)

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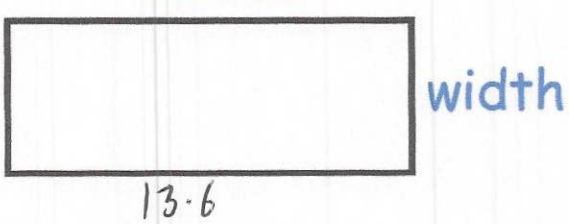
8. The length of a rectangle is 13.6 cm
The perimeter of the rectangle is 37.8cm



$13.6 + 13.6 = 27.2$
$37.8 - 27.2 = 10.6$
$10.6 \div 2 = 5.3$

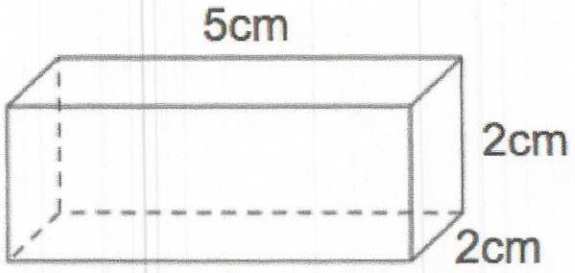
Calculate the width of the rectangle.

5.3 cm

.....

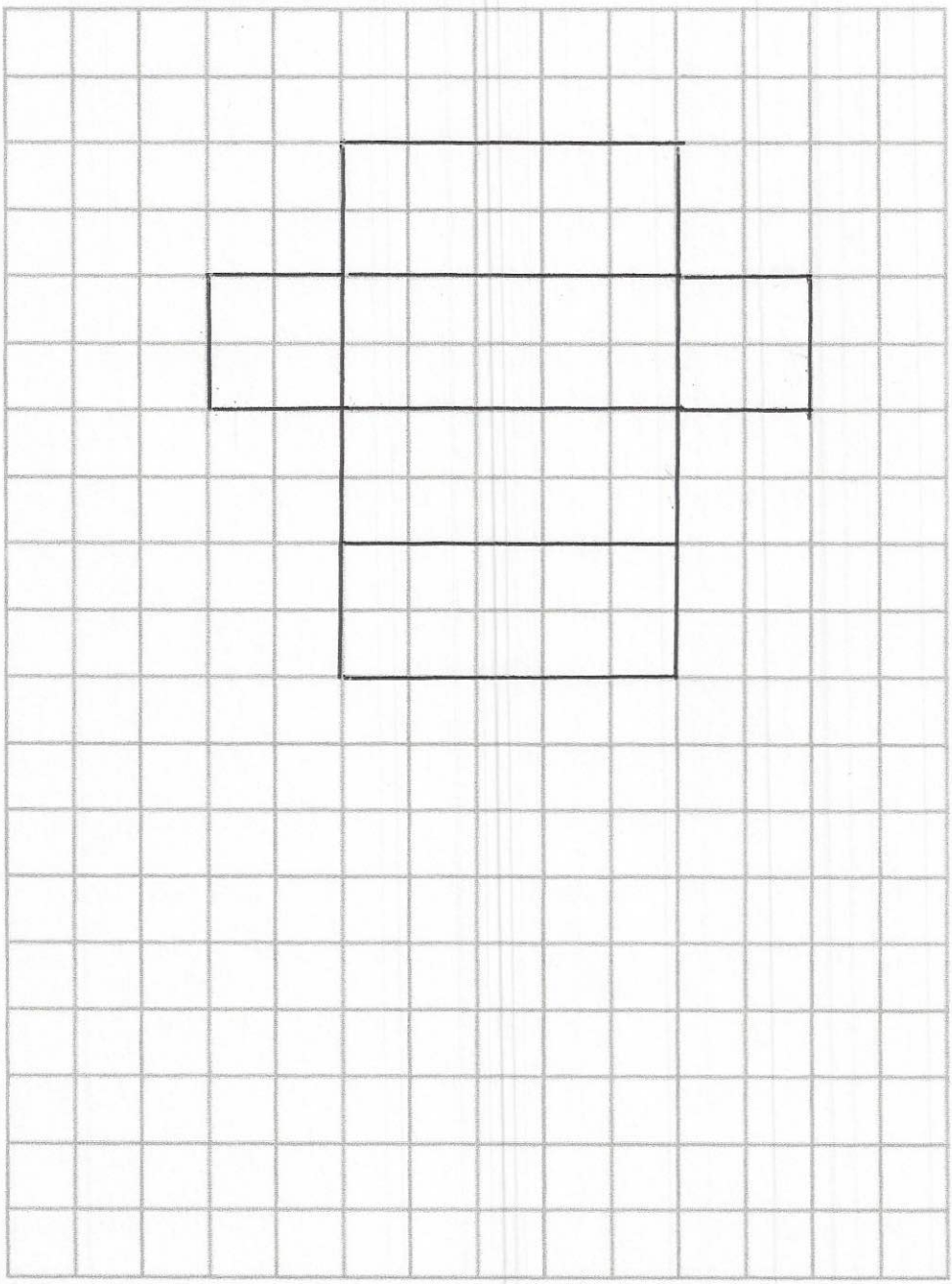
(3)

9. Shown below is a cuboid.



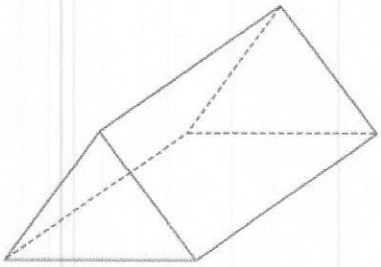
Draw a net for the cuboid.

Each square represents 1cm²



(3)

10. Below is a solid shape.



(a) What is the mathematical name for the shape?

Triangular Prism

(1)

(b) Write down the number of vertices

6

(1)

(c) Write down the number of faces

5

(1)

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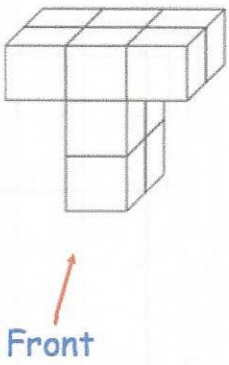
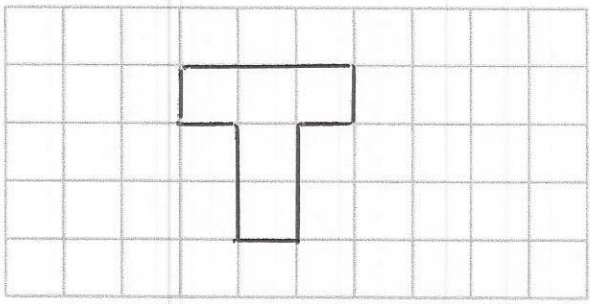
11. Shown below is a solid shape made from centimetre cubes.

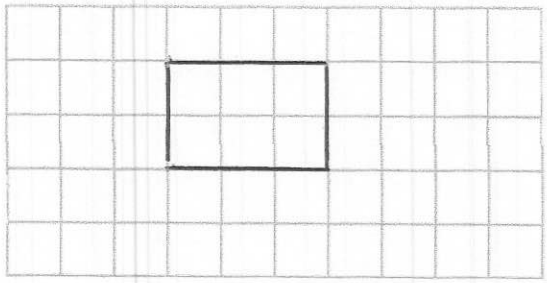


(a) On the centimetre square grid, draw the front elevation.



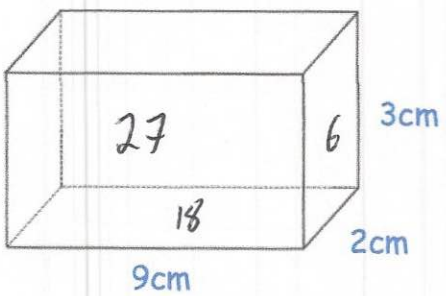
(2)

(b) On the centimetre square grid, draw the plan view.



(2)

12. Shown below is solid cuboid.



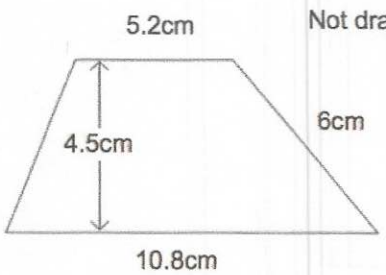
27
27
18
18
6
+ 6
102

Work out the total surface area of the cuboid.

102 ..... cm^2

(3)

13.



$\frac{1}{2}(5.2 + 10.8) \times 4.5$

Calculate the area of the trapezium.

36 ..... cm^2

(2)

14.

Foxtown			
52	Sandcliff		
70	32	Red Island	
31	14	28	Donhampton

The table shows the distances in miles by road between some towns.

(a) Write down the distance between Red Island and Foxtown

70 miles
(1)

(b) Write down the names of the two towns which are the least distance apart.

Sandcliff and Donhampton
(1)

Martin lives in Foxtown.
He works in Donhampton.
Martin drives to work in the morning and back home in the evening.
He works Monday to Friday.

(c) Work out how many miles Martin drives each week.

2 journeys a day
5 journey days a week
10 journeys in total

10 x 31

31 x 2 = 62
62 x 5 = 310

310 miles
(3)

15. Here is part of a timetable for a bus.

Southville	09 18	10 38	12 05
Leek	09 28	10 48	-------
Milton	*09 41	11 01	-------
Newtown	09 49	11 09	-------
Red Island	09 55	11 15	12 36
Sandville	10 13	11 33	-------
Bakerstown	10 31	11 51	13 00

A bus leaves Southville at 10 38

(a) At what time should the bus arrive at Newtown?

11:09
.....
(1)

(b) How long will the journey take?

22 + 9

31
.....minutes
(1)

James arrives at the Milton bus stop at 09 29.
He waits for the next bus to Red Island.

(c) (i) How many minutes should he wait?

12
.....minutes
(1)

(ii) At what time should James arrive at Red Island?

09:55
.....
(1)

Sally wants to travel from Southville to Bakerstown.
The 12 05 is an 'express' bus.

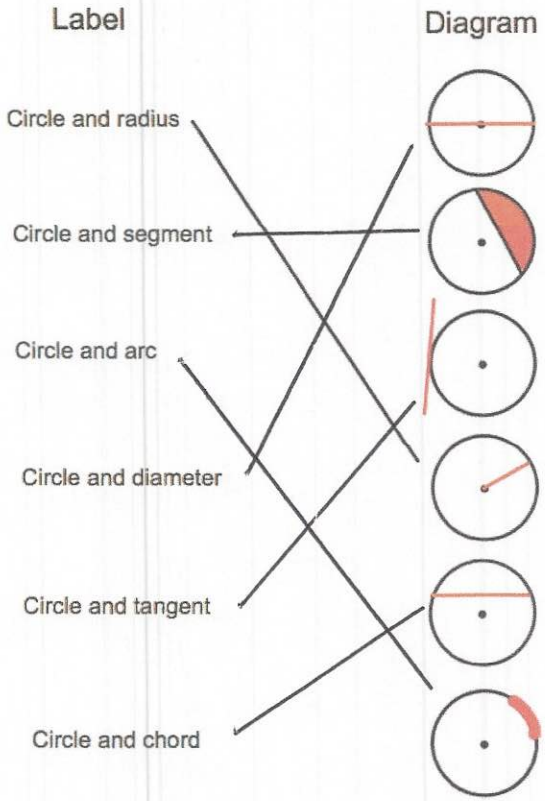
(d) How many minutes shorter is the journey if she takes the 'express bus?'

Express 55 minutes
Normal 1 hour 13 minutes

18
.....minutes
(2)

16. Here are 6 diagrams and 6 labels.
In the diagram the centre of the circle is shown with a dot.

Match each diagram to its label.
One has been done for you.



(4)

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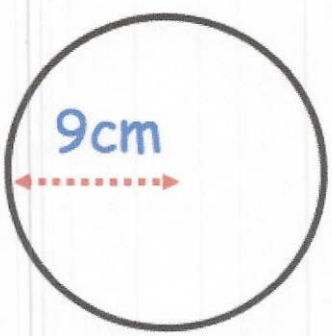
17. Shown below is a circle with radius 9cm.



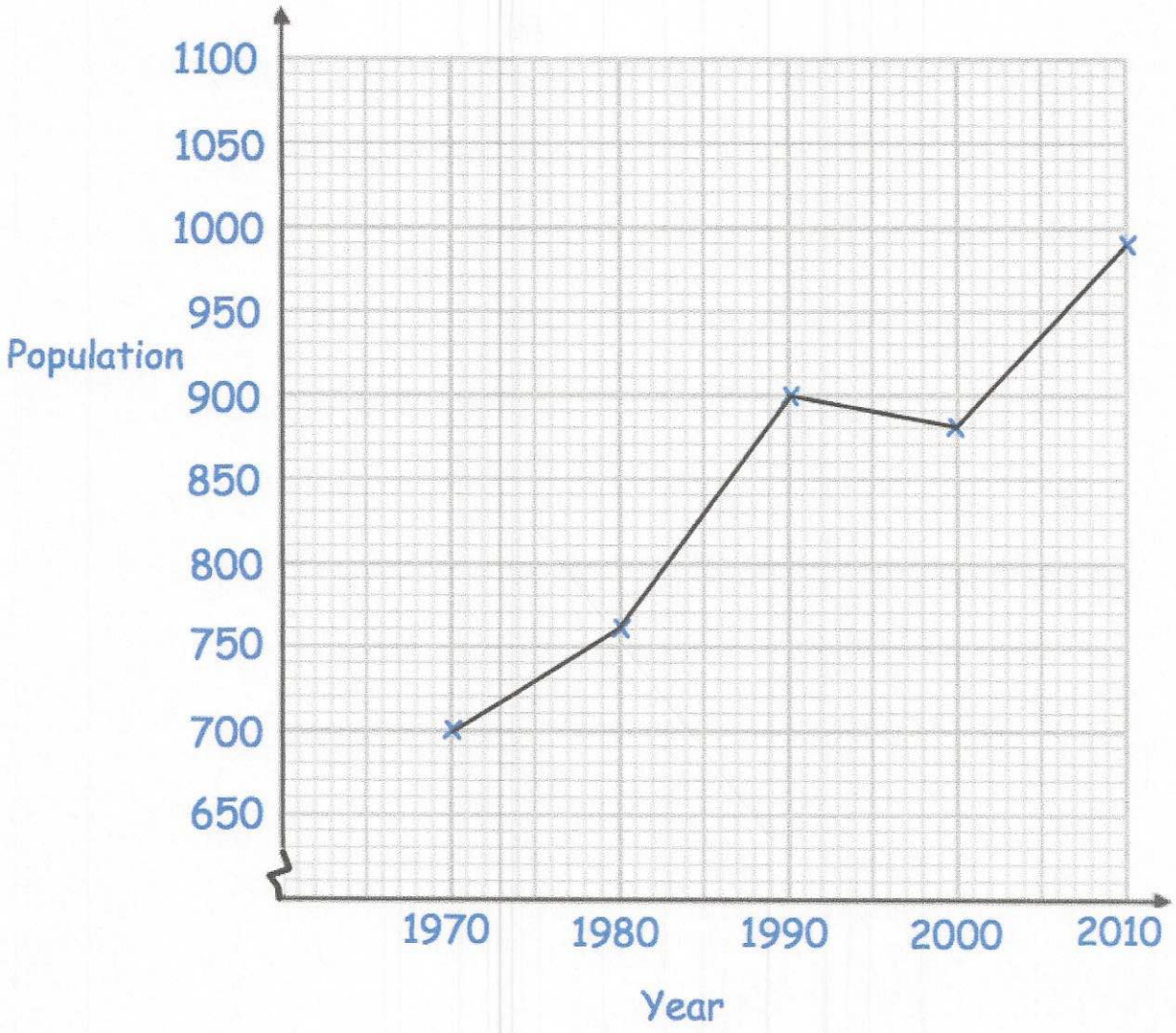
Work out the circumference of the circle.
Give your answer to 1 decimal place.

$\pi \times 18$

56.5 .....cm

(2)

18. Below is a line graph that shows the population of a village.



(a) What was the population in 1980?

760

(1)

(b) In which year was the population 700?

1970

(1)

The population is expected to increase by 120 by 2020.

(c) Work out the expected population in 2020.

990 + 120

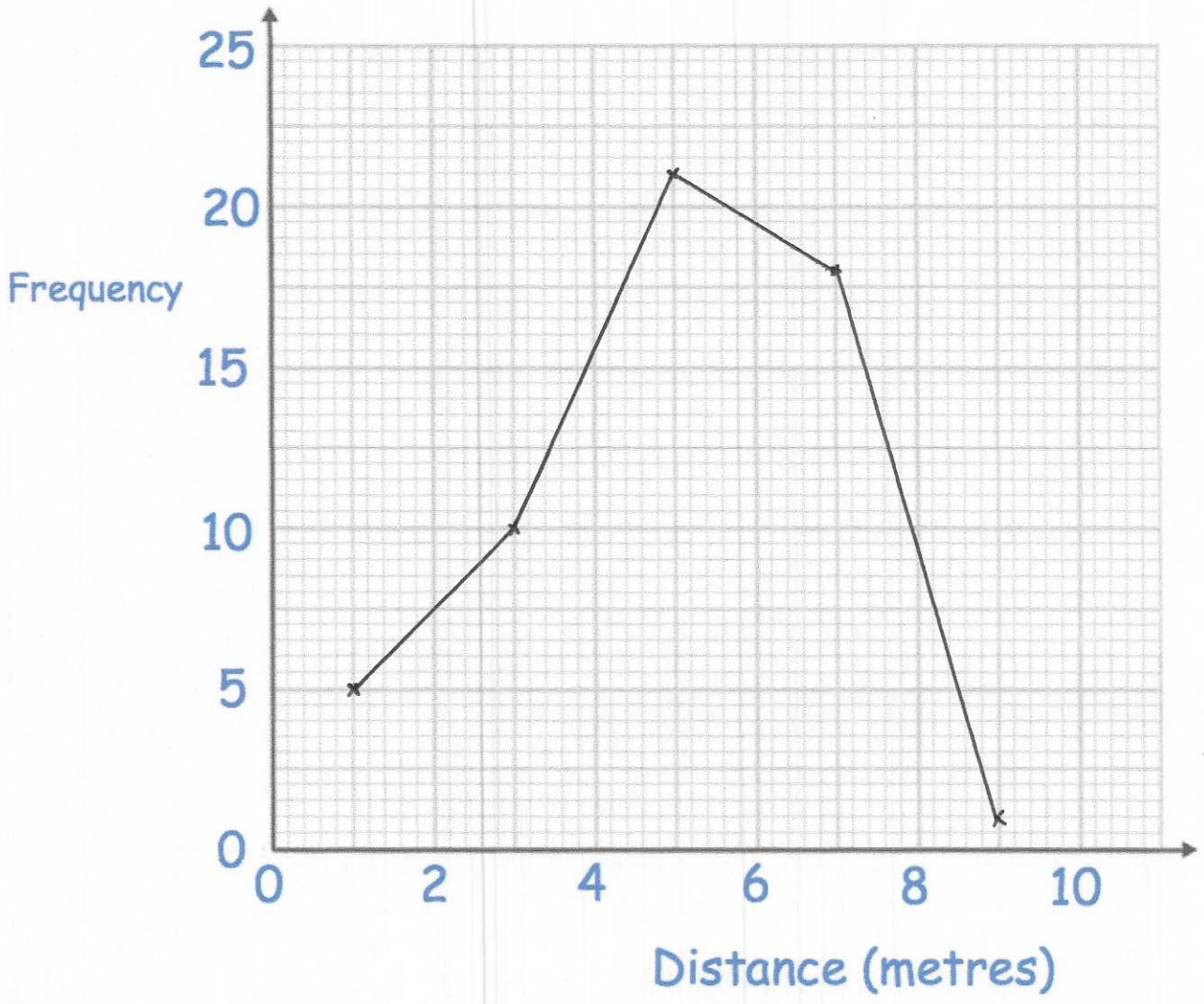
1110

(2)

19. The table gives information about the distances thrown, in metres, at a school sports day.

Time (seconds)	Frequency
$0 < d \leq 2$	5
$2 < d \leq 4$	10
$4 < d \leq 6$	21
$6 < d \leq 8$	18
$8 < d \leq 10$	1

Draw a frequency polygon for the information in the table.



(2)

20. In one week, Gina spent x minutes on the internet.
Sammy spent 15 minutes less than Gina.

(a) Write down an expression for how long Sammy spent on the internet.

$x - 15$

(1)

Neil spent three times as long as Gina on the internet.

(b) Write down an expression for how long Neil spent on the internet.

$3x$

(1)

(c) Write down an expression for total time spent on the internet.

$5x - 15$

(1)

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21. Expand $5y(2y + 1)$

$10y^2 + 5y$

(2)

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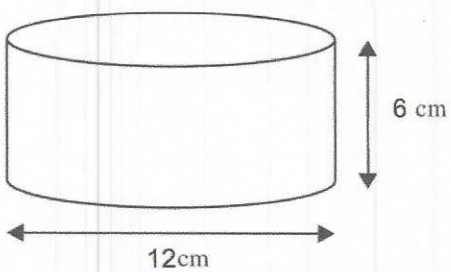
22. Shown below is a cylinder.



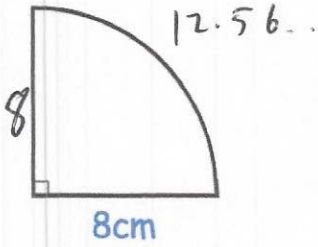
$V = \pi \times 6^2 \times 6$
$= 678.584...$

Calculate the volume.
Give your answer to 1 decimal place.

678.6 cm³

(3)

23.



$\pi \times 16 = 50.265...$

$50.265... \div 4 = 12.56...$

Calculate the perimeter of the sector.

28.561 .....cm

(2)

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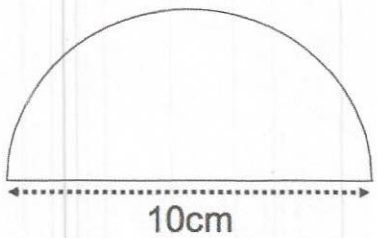
24. Shown is a semi-circle.



$\frac{1}{2}(\pi \times 5^2)$

Work out the area.
State the units for your answer.

39.27 cm^2 .....

(3)

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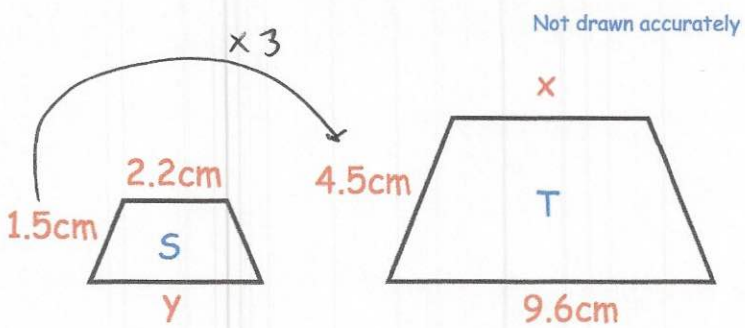
25. Trapezium S and trapezium T are similar.



Find the size of x.

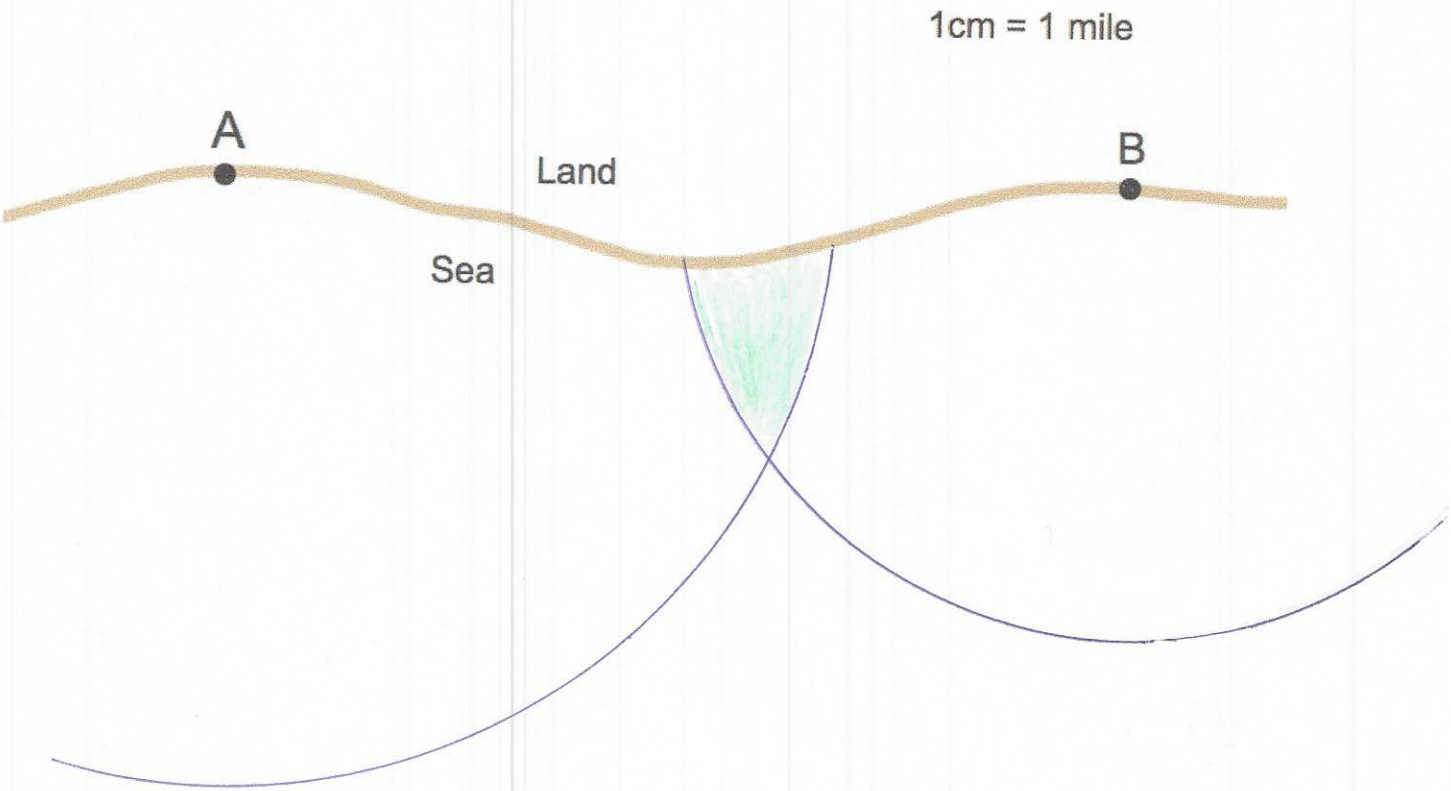
6.6 .....cm

(2)

26. The diagram shows two lighthouses.

A boat is within than 8 miles of lighthouse A.
The same boat is within 6 miles of lighthouse B.

Shade the possible area in which the boat could be.



(2)

27.

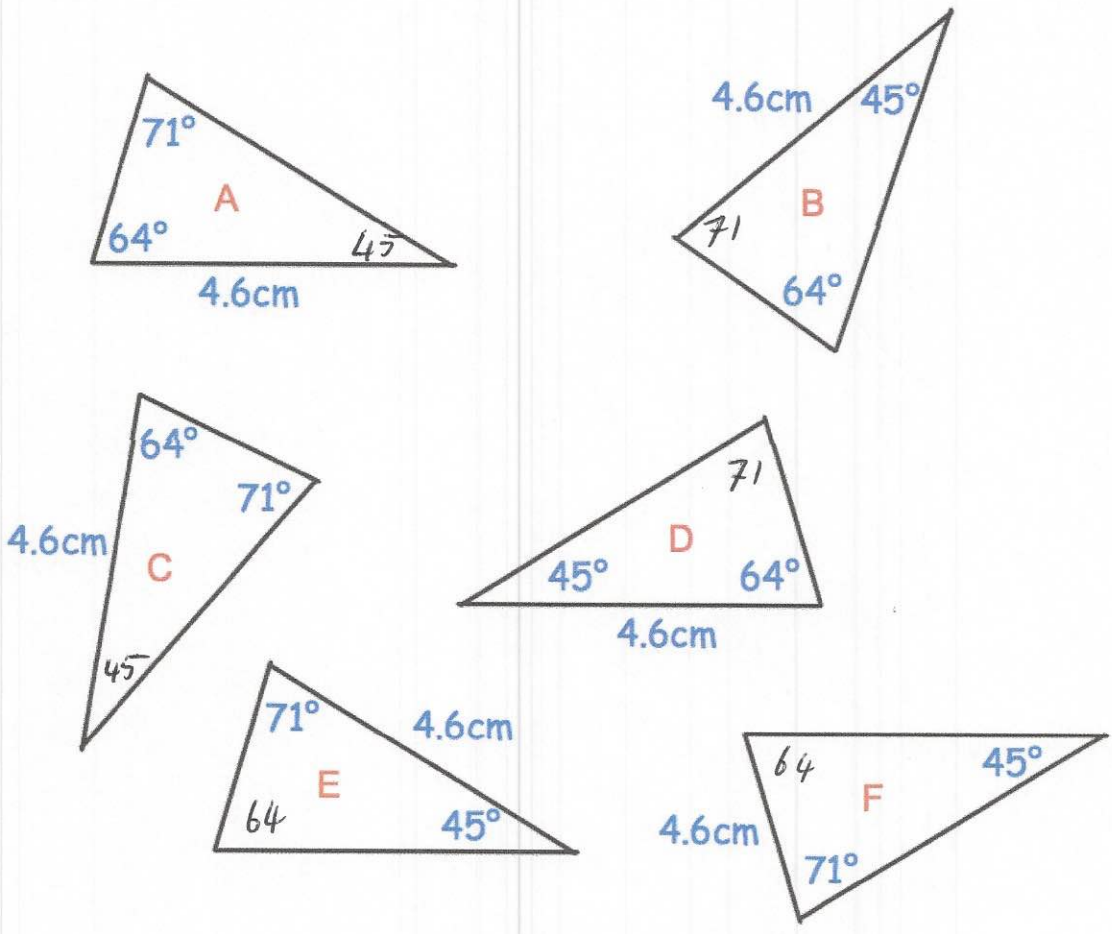
A solid silver spoon has a mass of 65.1g.
The volume of the spoon is 6.2cm³.
Calculate the density of silver.

$d = \frac{m}{v} = \frac{65.1}{6.2}$

10.5 ..... g/cm³

(2)

28. Shown below are six triangles that are not drawn accurately.



Which two triangles are congruent to triangle A?

C and D

(2)

29. Shown is a sphere with diameter 6cm.

Calculate the volume of the sphere.

$\frac{4}{3}\pi r^3$ $\frac{4}{3} \times \pi \times 3^3$

113.1 ..... cm^3

(3)

---

30. Here are the first four terms of a number sequence.

7 10 13 16 19 22 25 28 31 (34) 37 40 43 46 (49)

Work out the difference between the 10th term and 15th term in the sequence.

$49 - 34$

15 .....

(2)

---

31. Solve $7w + 3 = 5w + 9$

$-5w \quad -5w$

$2w + 3 = 9$

$-3 \quad -3$

$2w = 6$

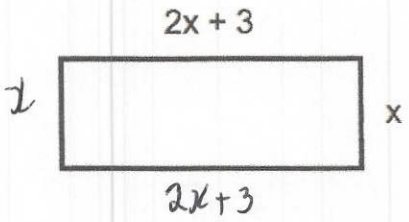
$\div 2 \quad \div 2$

$w = 3$

w = 3 .....

(2)

32. Below is a rectangle, with width x cm and length 2x + 3 cm.



The perimeter of the rectangle is 72cm.

Calculate the size of the width and length.

$6x + 6 = 72$
$-6 \quad -6$
$6x = 66$
$x = 11$

Width = 11 cm

Length = 25 cm

(4)

---

33. Sarah is x years old.
Thomas is 3 years older than Sarah.
David is twice as old as Sarah.
The total of their ages is 51.

(a) Write an expression for Thomas's age in terms of x.

$x + 3$

(1)

(b) Write an expression for David's age in terms of x.

$2x$

(1)

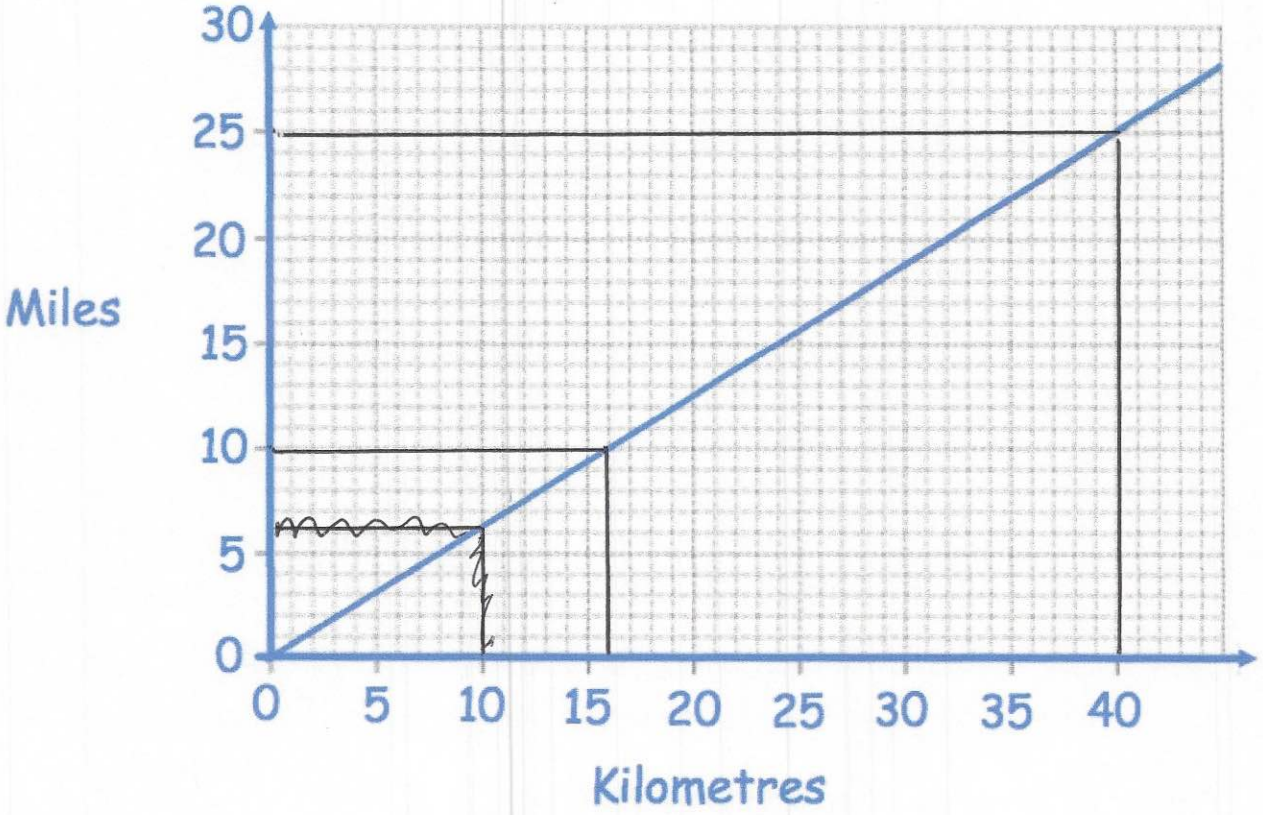
(c) Form an equation in x and solve it to work out Sarah's age.

$4x + 3 = 51$
$-3 \quad -3$
$4x = 48$

$x = 12$

(2)

34. A conversion graph for kilometres and miles is shown.



(a) Use the graph to convert 40 kilometres to miles.

25 .....miles
(1)

(b) Use the graph to convert 10 miles to kilometres.

16 .....kilometres
(1)

(c) Convert 200 kilometres to miles.

40 km = 25 miles
×5 ↓ ↓ ×5

125 .....miles
(2)

35. Make w the subject of the formula

$y = 3w - a$

$+a \quad +a$

$y + a = 3w$

$\div 3 \quad \div 3$

$\frac{y+a}{3} = w$

$w = \frac{y+a}{3}$

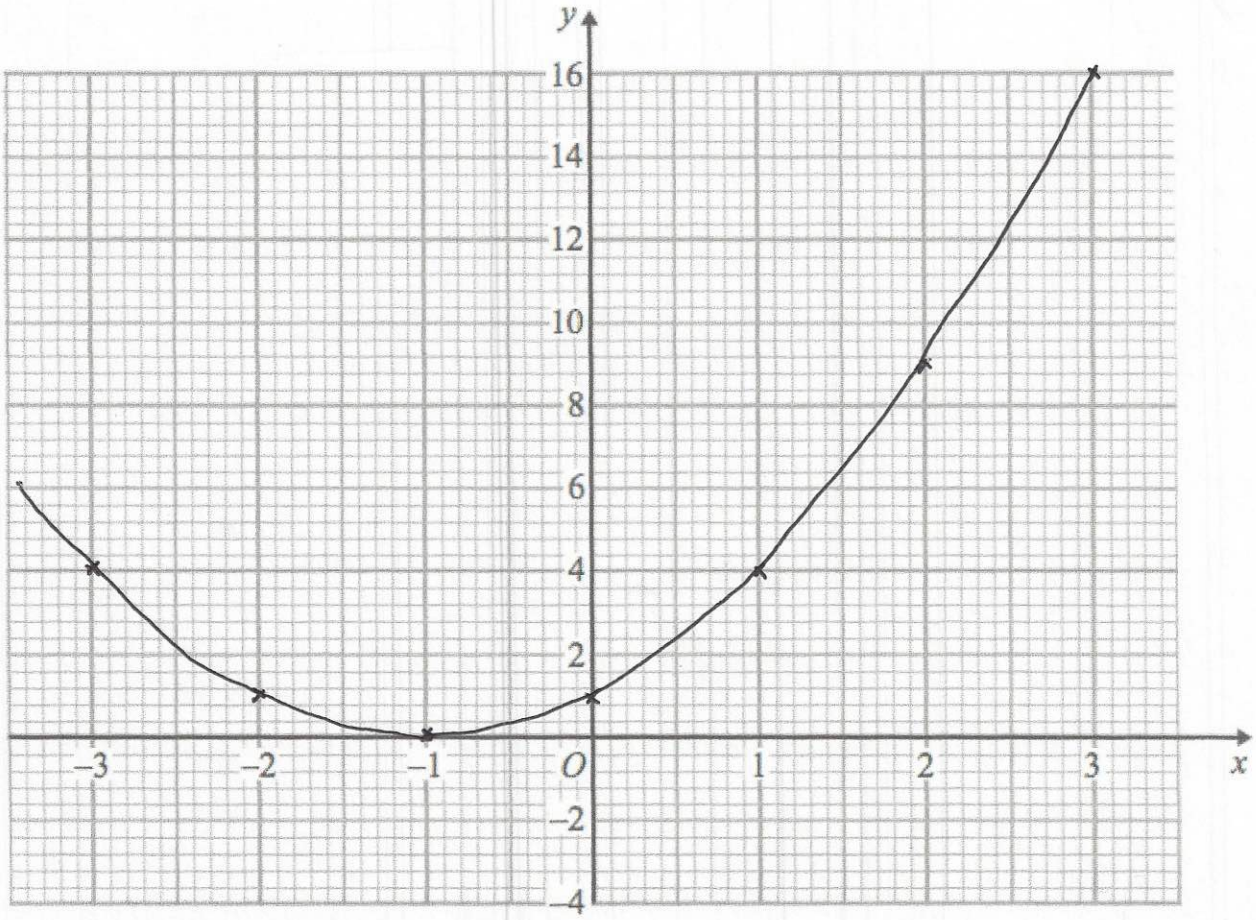
(2)

36. (a) Complete the table of values for $y = x^2 + 2x + 1$

x	-3	-2	-1	0	1	2	3
y	4	1	0	1	4	9	16

(2)

(b) On the grid, draw the graph of $y = x^2 + 2x + 1$ for the values of x from -3 to 3.



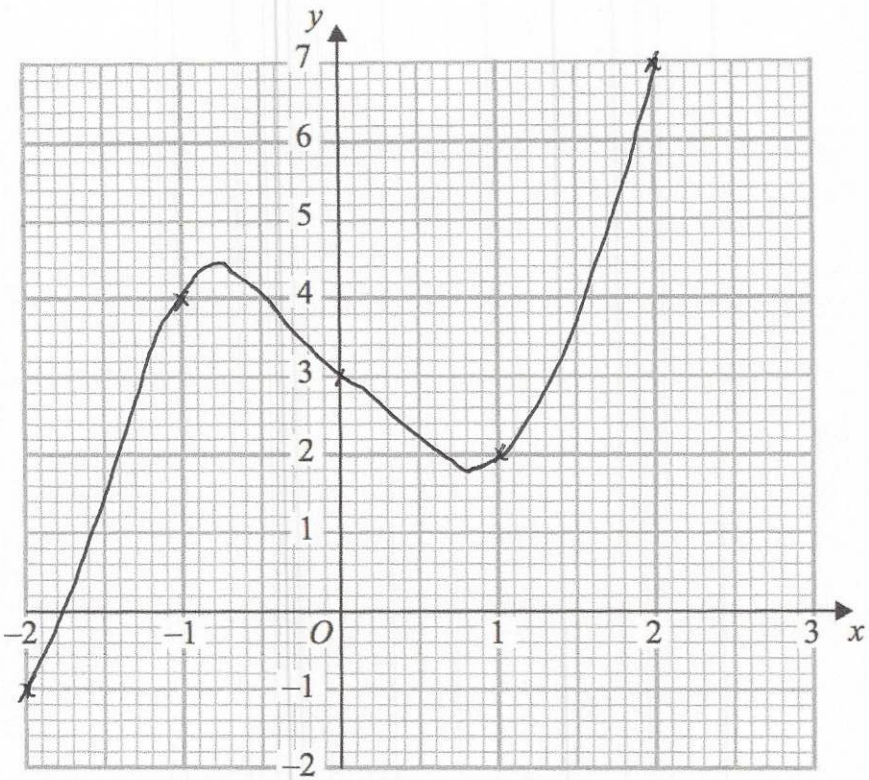
(2)

37. (a) Complete the table of values for $y = x^3 - 2x + 3$

x	-2	-1	0	1	2
y	-1	4	3	2	7

(2)

(b) On the grid, draw the graph of $y = x^3 - 2x + 3$ for the values of x
$-2 \leq x \leq 2$



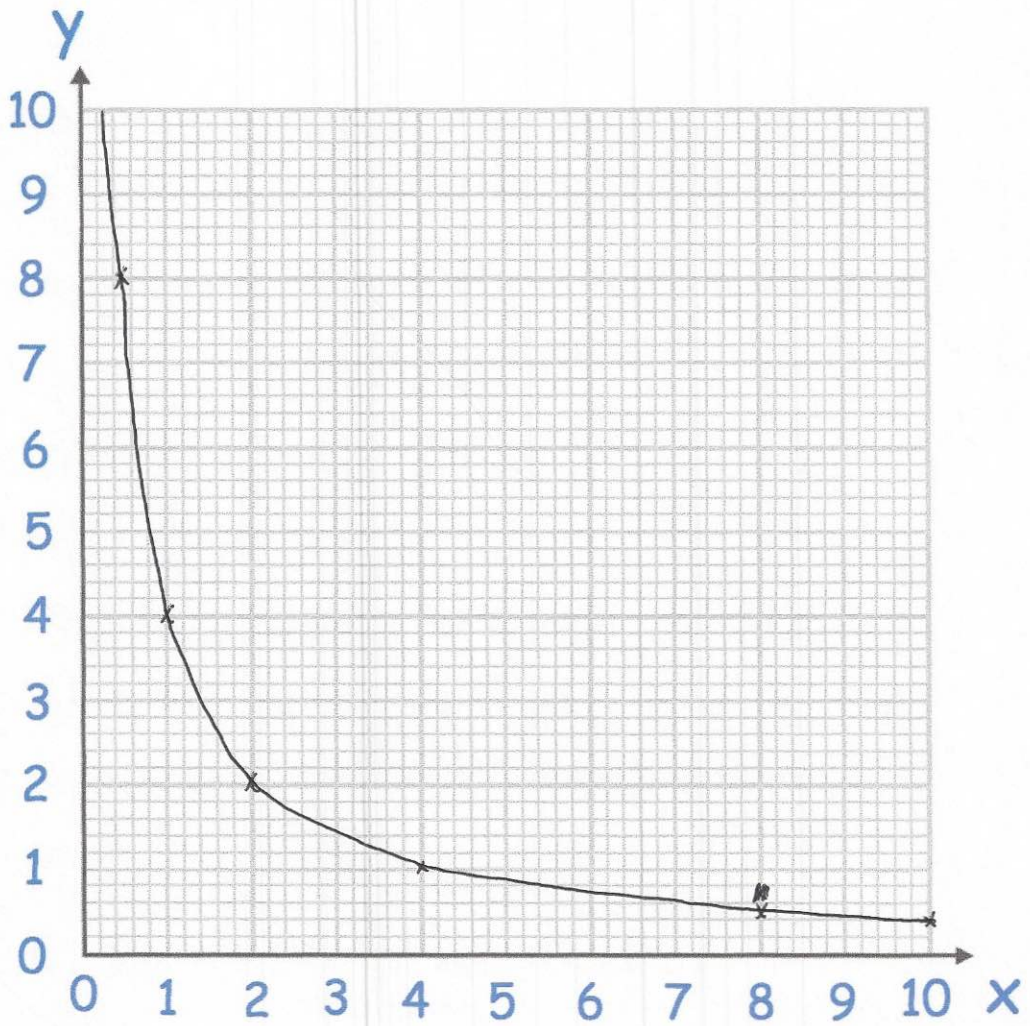
(2)

38. (a) Complete the table of value for $y = \frac{4}{x}$

x	0.5	1	2	4	8	10
y	8	4	2	1	0.5	0.4

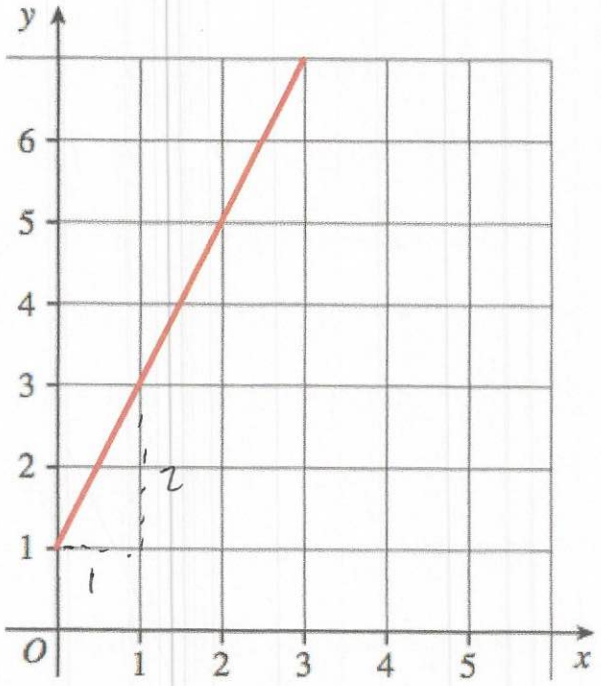
(2)

(b) On the grid, draw the graph of $y = \frac{4}{x}$ for $0.25 \leq x \leq 10$



(2)

39. A straight line L is shown on the grid.



$2 \div 1 = 2$

Work out the equation of line L

$y = 2x + 1$

(3)