Name:

GCSE Maths 2022
AQA Foundation Paper 1
Set A
Non-Calculator

Corbettmaths

Equipment

1. A black ink ball-point pen.
2. A pencil.
3. An eraser.
4. A ruler.
5. A pair of compasses.
6. A protractor.

Guidance

1. Read each question carefully.
2. Check your answers seem right.
3. Always show your workings

Information

1. This paper has been created based on topics in the Advance Information.
2. Also see Corbettmaths for the checklist for the entire GCSE as these topics may still be useful for Paper 1
3. There is one question per topic - this paper is designed to give an opportunity to practice each topic rather than replicate the actual paper.
4. The marks for questions are shown in brackets

GCSE 2022 Resources

1. John buys 6 crates of apples.
Each crate contains 12 sacks of apples.
Each sack contains 24 apples.

How many apples did John buy in total?

.....

(3)

---

2. Paul has £10 to buy rulers at 60p each.

What change should he get if he buys as many as possible?

.....

(3)

3. Fill in the missing digits to make the addition correct.

$$\begin{array}{r} \square\ 6\ 4 \\ +\ 2\ \square\ 6 \\ \hline 7\ 5\ \square \end{array}$$

(2)

---

4. At a football match, there are 7,194 United fans and 16,057 City fans.

How many more fans do City have?

.....

(2)

---

5. Work out an estimate for

$$\frac{596.4 \times 2.06}{0.521}$$

.....

(3)

6. Work out

(a) $(2 + 5)^2$

.....

(1)

(b) $5 + 3 \times 6$

.....

(1)

(c) $22 - 14 \div 2$

.....

(1)

---

7. Write the following numbers in standard form.

(a) 5600

.....

(1)

(b) 41200000

.....

(1)

(c) 0.00000008

.....

(1)

Work out, giving each answer in standard form.

(d)

$(4 \times 10^5) \times (2 \times 10^4)$

.....

(2)

(e)

$(5 \times 10^6) \times (7 \times 10^8)$

.....

(2)

---

8. Bill is 80 years old.

His son Max is $\frac{5}{8}$ of his age.

His granddaughter Jayne is $\frac{1}{5}$ of his age.

How many years older than Jayne is Max?

.....

(4)

9. Work out, as a simplified fraction.

$$\frac{3}{4} + \frac{2}{9}$$

.....

(2)

---

10. Work out

$$1\frac{1}{3} \times 2\frac{2}{5}$$

Give your answer as a mixed number.

.....

(3)

---

11. Work out

$$\frac{2}{17} \div \frac{2}{5}$$

Give your answer as a fraction in its simplest form.

.....

(2)

12. What is the reciprocal of 4?

Circle the correct answer.

4 0.4 $\frac{1}{4}$ –4

(1)

---

13. Colin gains 13 out of 20 in a class test.

Work out his mark as a percentage

.....%

(2)

---

14. At Frome International train station, 35% of trains were late in a week.
In that week there were 440 trains.

Calculate how many trains were on time.

.....

(3)

15. Charlotte and Melissa booked theatre tickets costing £400.
They have a voucher that entitles them to 20% off the total price.
Charlotte and Melissa share the total cost of the tickets in the ratio 1:4

Work out how much more Melissa pays than Charlotte.

.....

(5)

16. Fill in the missing numbers

(a)

$\square + 2 = -1$

(1)

(b)

$8 + \square = 0$

(1)

(c)

$-8 - \square = 3$

(1)

(d)

$2 \times \square = -16$

(1)

(e)

$-1 \times \square = 2$

(1)

(f)

$\square \times -7 = 42$

(1)

17. Isla buys 3 apples.
She pays with a £5 note.
Isla receives £2.45 change.

How much does one apple cost?

.....

(3)

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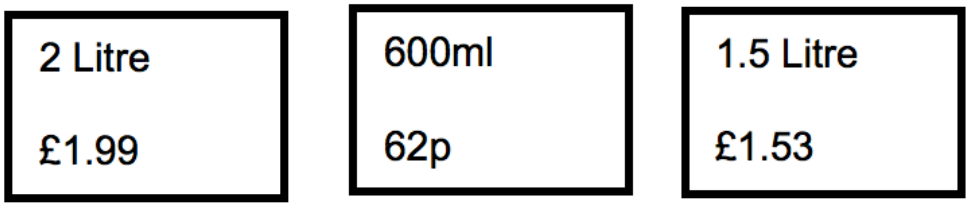
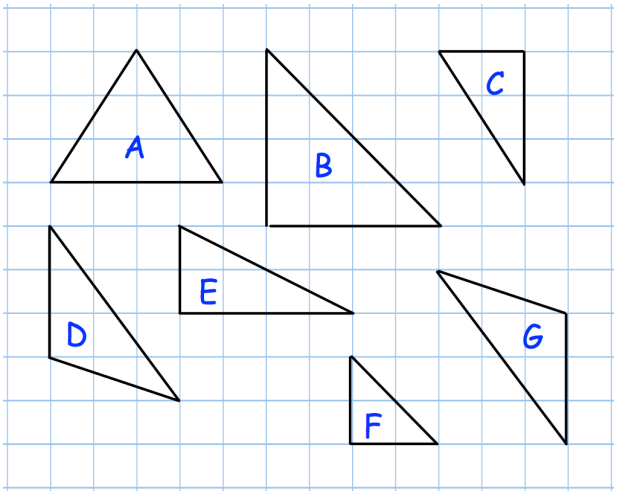
18. A shop sells cola in three different size bottles.



Which size bottle is the best value for money?
You must show all your working.

(3)

19. Shown below are some triangle on a centimetre grid.

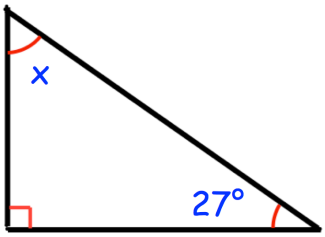


What kind of triangle is triangle A?

.....

(1)

20.



Find x

.....°

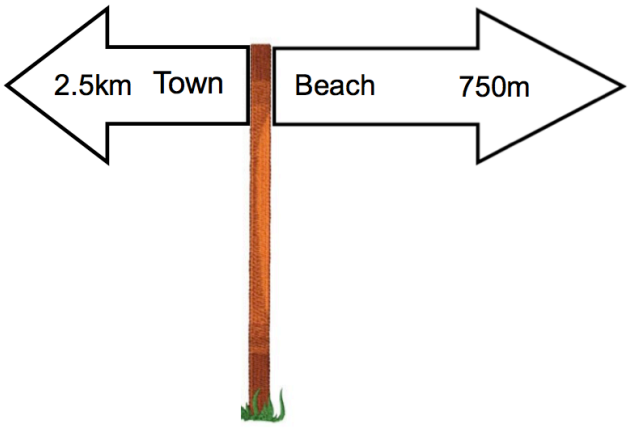
(2)

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

Calculate the width of the rectangle.

.....cm
(3)

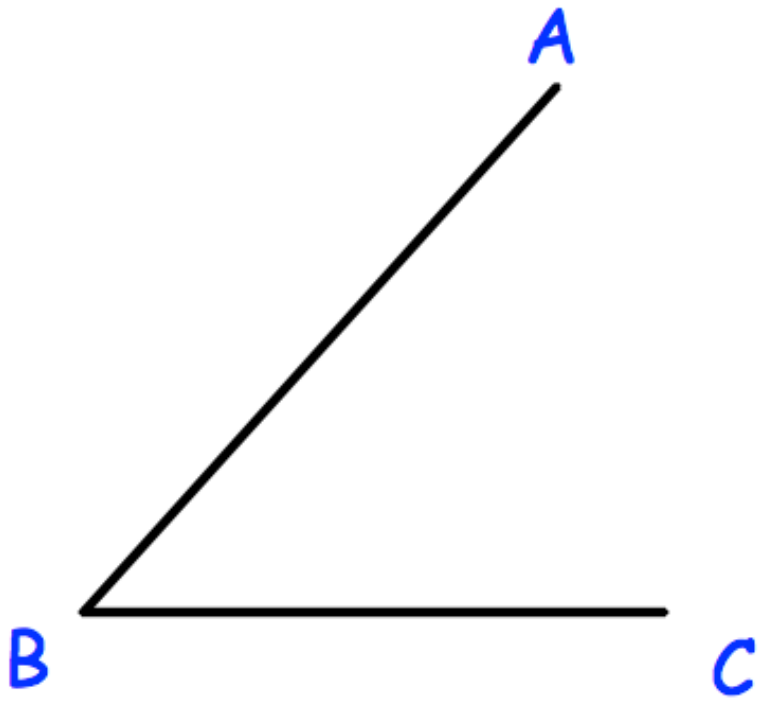
22.



Work out the distance between the town and the beach.
State your units.

.....
(3)

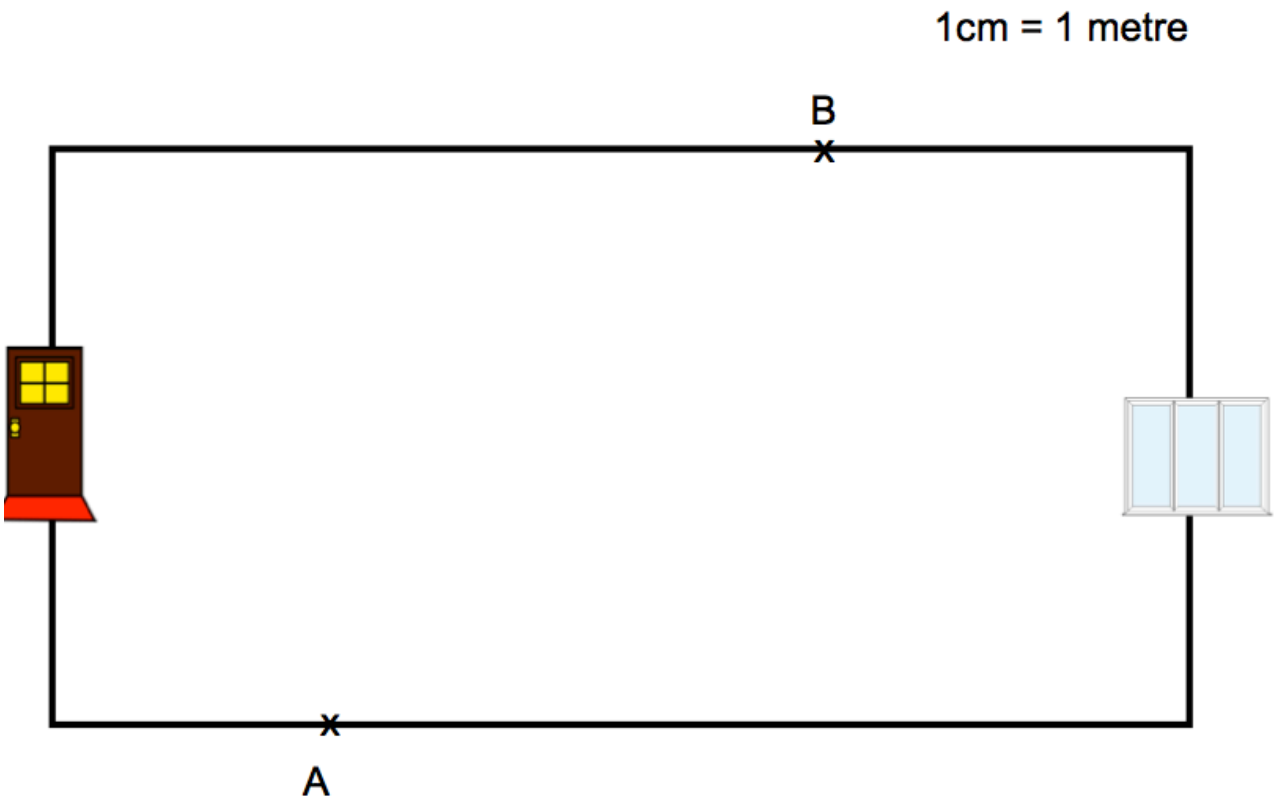
23. Using ruler and compasses, construct the bisector of angle ABC.



(2)

24. Below is a diagram of a hall.
There is a front door at one end of the hall and a patio door at the other.
There are two burglar alarm sensors, one at A and one at B.

The range of each sensor is 4m.



The alarm is switched on.

Is it possible to walk from the front door to the patio door without setting off the alarm?

.....

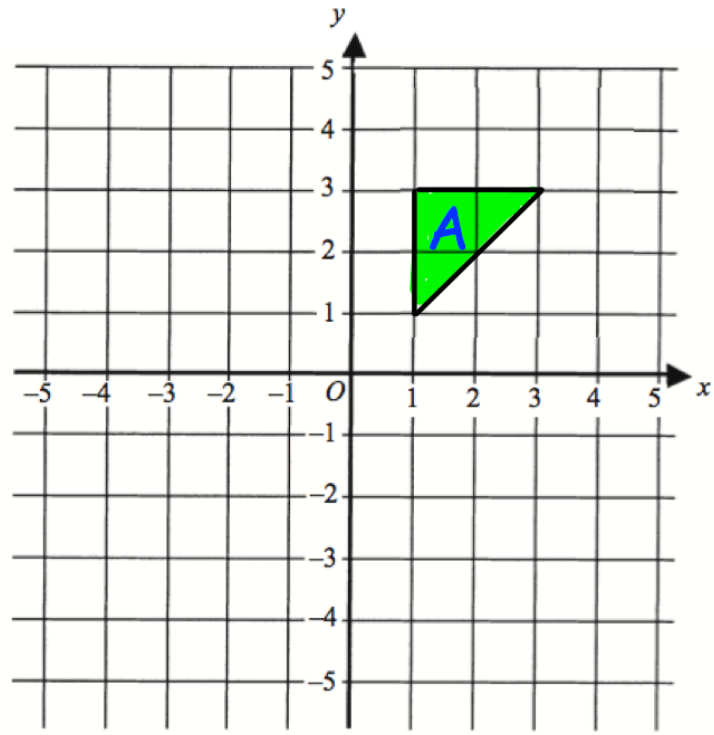
(3)

25. What is the volume of a piece of metal that has a mass of 300g and density of 6g/cm³?

……..cm³

(2)

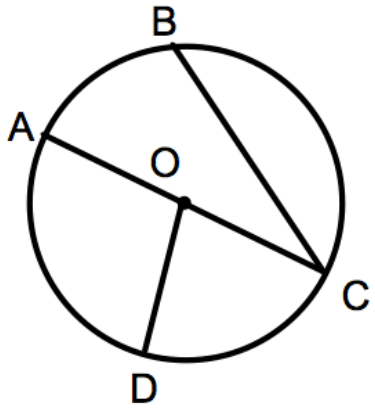
26.



Translate triangle A by the vector $\begin{pmatrix} -3 \\ 1 \end{pmatrix}$

(2)

27. Points A, B, C and D are four points on the circle with centre O.



Here are six words that are used with circles.

Arc **Diameter** **Chord** **Tangent** **Circumference** **Radius**

Choose the correct word to describe each line below.

(a) The straight line AC is a ..... of the circle.

(1)

(b) The straight line BC is a ..... of the circle.

(1)

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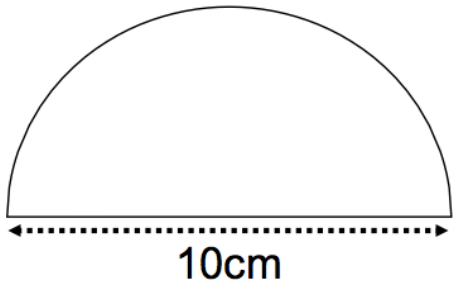
28. Shown is a semi-circle.



Work out the perimeter.
Give your answer in terms of π

.....cm

(3)

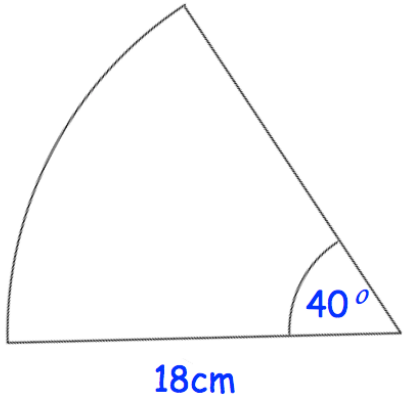
29. A circular mirror has a diameter of 40cm

Work out the area of the mirror.
Give your answer in terms of π

.....m²

(2)

30.

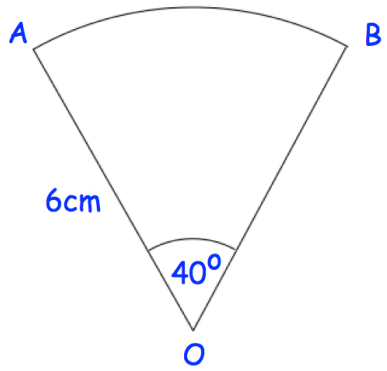


Find the length of the arc, giving your answer in terms of π.

.....cm

(3)

31. OAB is a sector of a circle.



Find the area of the sector.
Give your answer in terms of π.

.....cm²

(3)

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32. The two-way table shows the grades students in Year 10 received in their exams.

Maths \ Physics	A	B	C	D
A	7	6	1	1
B	3	5	3	0
C	4	2	6	3
D	0	0	1	0

(a) How many students received a B in maths?

.....

(2)

(b) How many students received a higher grade in physics than maths?

.....

(2)

33. Darcy has a biased spinner.
A spinner has sections labelled 1, 2, 3, 4 and 5.
The table below shows information about some of the probabilities

Number	1	2	3	4	5
Probability	x	0.15	0.05	0.2	0.35

Work out the value of x.

.....

(2)

---

34. Abid goes to a coffee shop.
He chooses one drink and one snack.

Drink	Snack
Tea Coffee Juice	Muffin Brownie Crisps Pastry

Write down all the possible combinations.

.....

.....

.....

(2)

35. Mervyn plays six games of darts.
His scores are

120 71 80 14 90 117

(a) Work out the range of his scores.

.....
(2)

(b) Work out the median of his scores.

.....
(2)

(c) Work out the mean of his scores.

.....
(2)

---

36. The frequency table shows the number of pets owned by the students in Year 11

Number of pets	Frequency
0	13
1	28
2	50
3	9

Write down the modal number of pets owned.

.....
(1)

37. The frequency table shows the piano grade of 17 students in a class.

Grade	Frequency
2	3
3	3
4	4
5	3
6	2
7	2

3 new students, who are all Grade 6, join the class.

The teacher says the median piano grade will increase.
Is she correct?
You must explain your answer.

……

……

(3)

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38. There are 10 students in Class 1 and 40 students in Class 2.
All 50 students sit a test.

The mean score for the students in Class 1 was 80%
The mean score for the students in Class 2 was 70%
Find the mean score of all the students.

……

(3)

39. Timothy asked 30 people how long it takes them to get to school.

The table shows some information about his results.

Time (t minutes)	Frequency
$0 < t \leq 10$	2
$10 < t \leq 20$	8
$20 < t \leq 30$	12
$30 < t \leq 40$	7
$40 < t \leq 50$	1

Work out an estimate for the mean time taken.

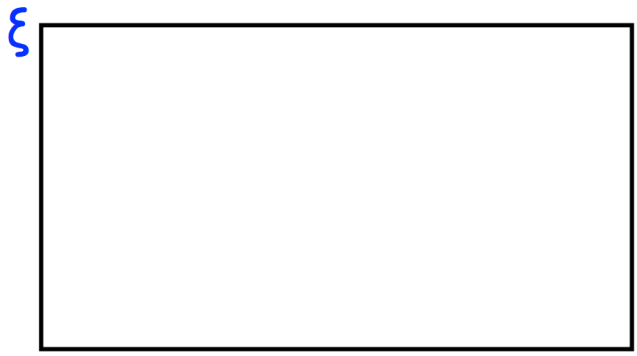
.....minutes

(4)

40. A gym runs two fitness classes, spinning and circuits.

On Saturday 100 people visited the gym.
18 people attended the spinning class.
10 people attended both classes.
56 people did not attend either class.

(a) Represent this information on a Venn diagram



(3)

A person who attended the gym is selected at random.

Find the probability that this person

(b) attended only circuits

.....

(2)

(c) attended exactly one class

.....

(2)

41. $w^{12} \div w^{y} = w^{6}$

(a) Find the value of y

y = ……..

(1)

$(m^{x})^{3} = m^{9}$

(b) Find the value of x

x = ……..

(1)

---

42. Here are the first two terms of a geometric progression.
All the terms in the progression are negative.

Work out the fifth term.

–5 –15 … … …

.....

(3)

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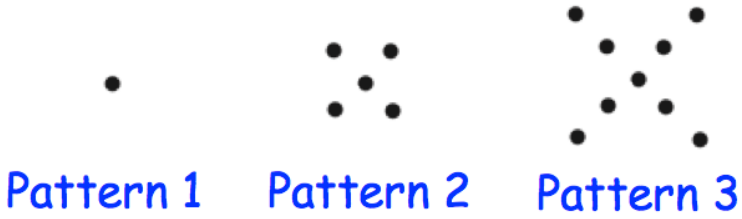
43. Work out the *n*th term for this sequence

13 23 33 43 53 ... ...

.....

(2)

44. Here is a pattern of dots



(a) Continue the pattern to show Pattern 4

(2)

(b) How many dots will there be in Pattern 6?

.....

(1)

(c) Which pattern will use 77 dots?

.....

(1)

(d) Explain why there will **not** be a pattern that uses 200 dots.

.....

.....

(1)

45. Solve $4y + 1 = 29 - 2y$

y = ...

(2)

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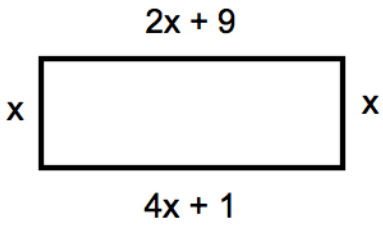
46. A rectangle is shown below.



(a) Explain why $4x + 1 = 2x + 9$

.....

.....

(1)

(b) Find the size of x.

x = ...cm

(2)

(c) Work out the area of the rectangle.

.....cm^2

(2)

47. Solve the inequality $4x + 6 \geq 8$

.....

(2)

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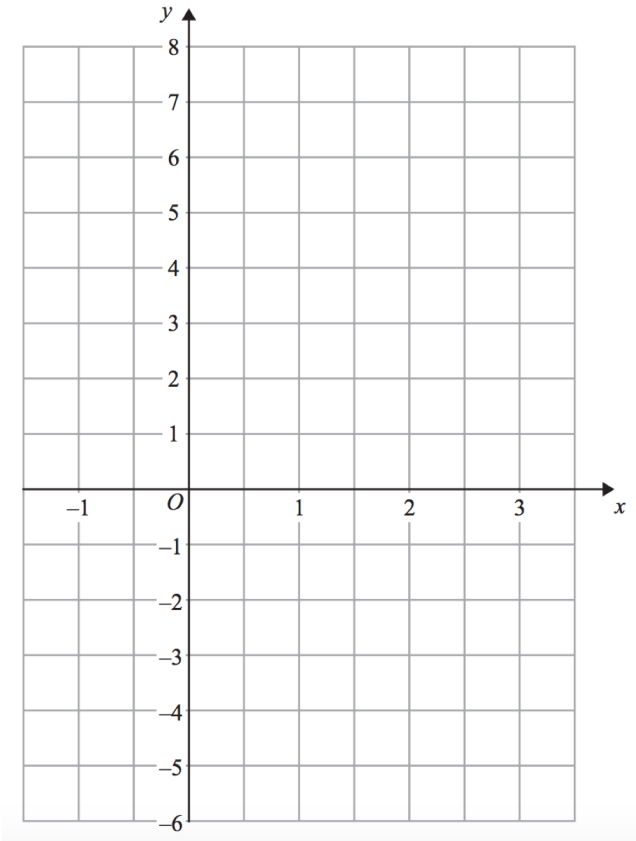
48. (a) Complete the table of values for $y = 3x - 2$

x	-1	0	1	2	3
y					7

(2)

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



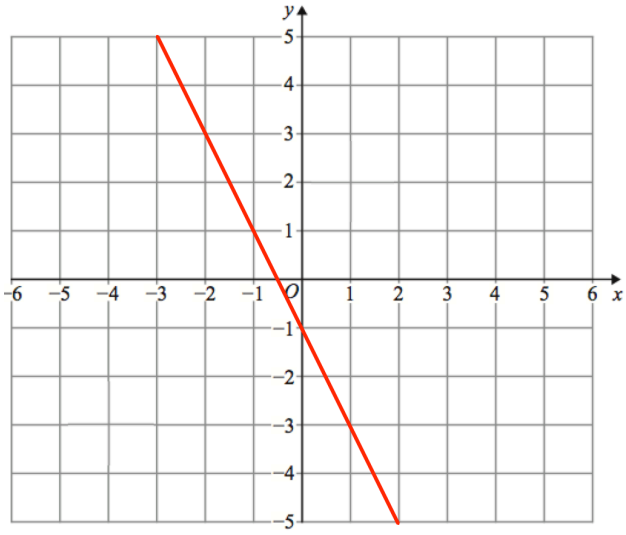
(2)

(c) Use your graph to estimate the value of x when y = 5

x = ...

(1)

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

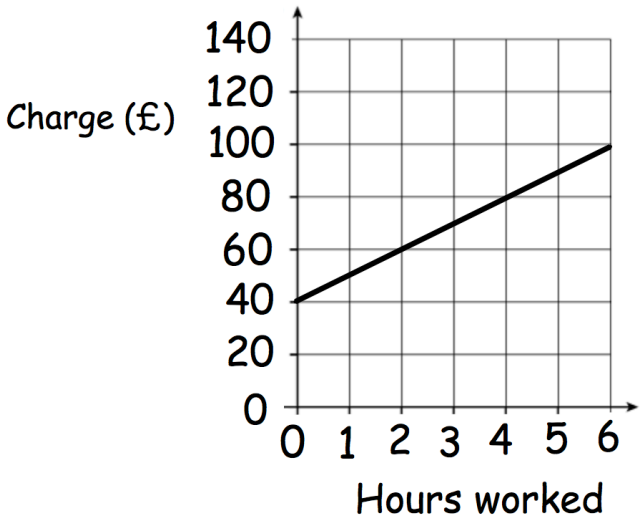


Work out the equation of line L

.....

(3)

50. Dara is a plumber.
The graph shows how much he charges for each job.



(a) How much does Dara charge for a job lasting 3 hours?

.....

(1)

(b) How much does Dara for each hour?

.....

(1)

51. $v = u + at$

(a) Work out v when $u = 23$, $a = 4$ and $t = 3$

.....

(2)

(b) Work out u when $v = 30$, $a = 2$ and $t = 8$

.....

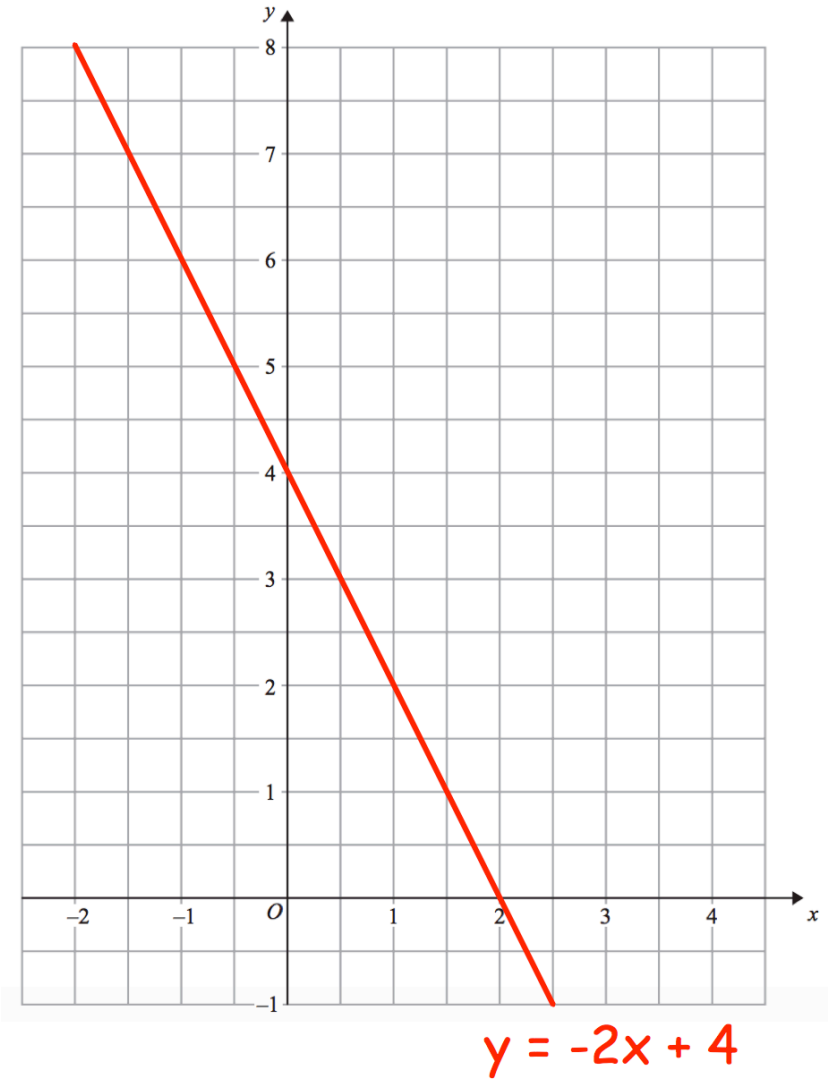
(2)

(c) Work out t when $v = 40$, $u = 12$ and $a = 4$

.....

(2)

52. The straight line $y = -2x + 4$ has been drawn on the grid.



(a) On the same grid, draw the graph of $y = x + 1$

(2)

(b) Write down the coordinates of the point where the graphs $y = -2x + 4$ and $y = x + 1$ intersect.

.....

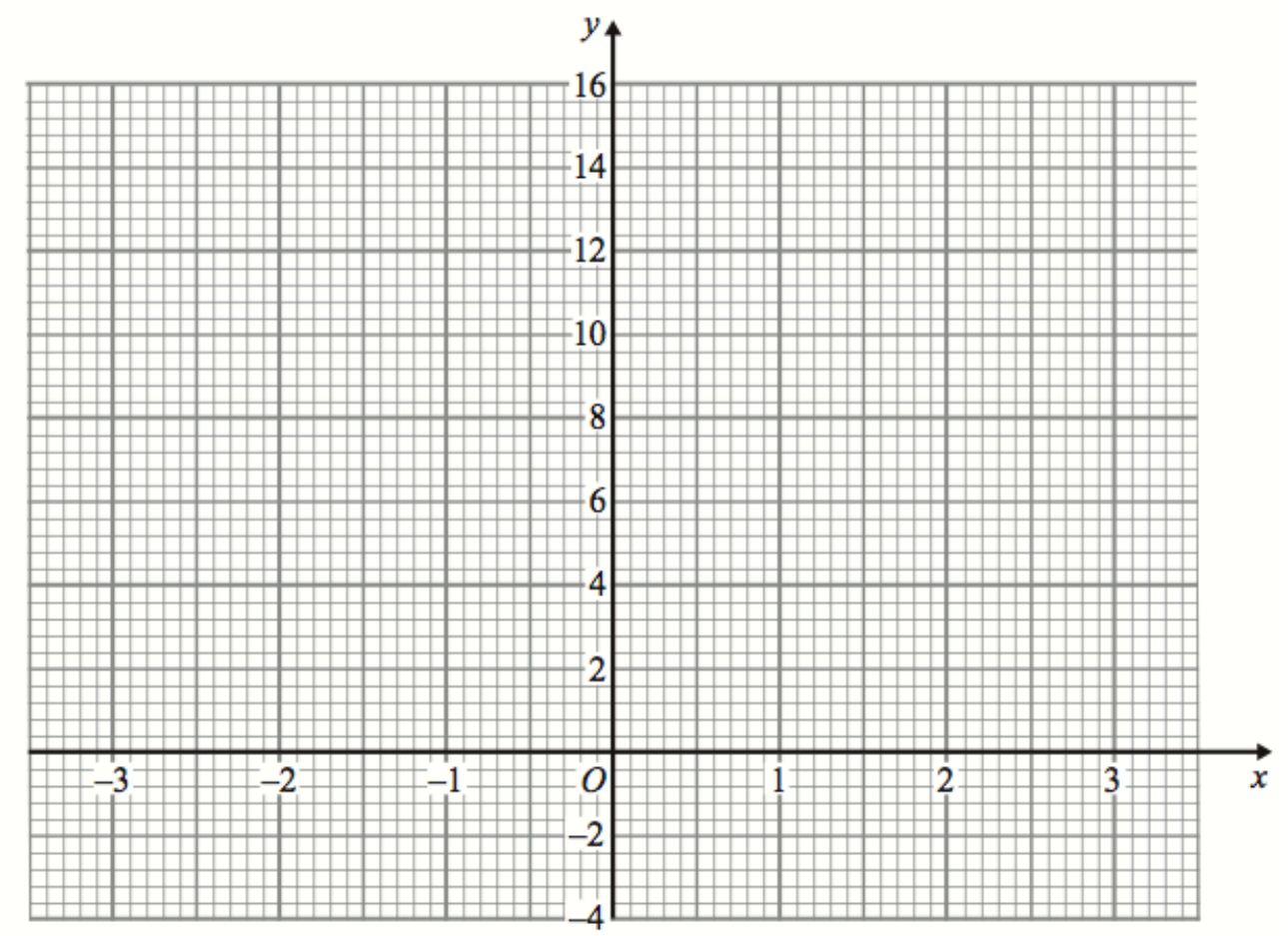
(1)

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

x	-3	-2	-1	0	1	2	3
y	6		0		2	6	

(2)

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



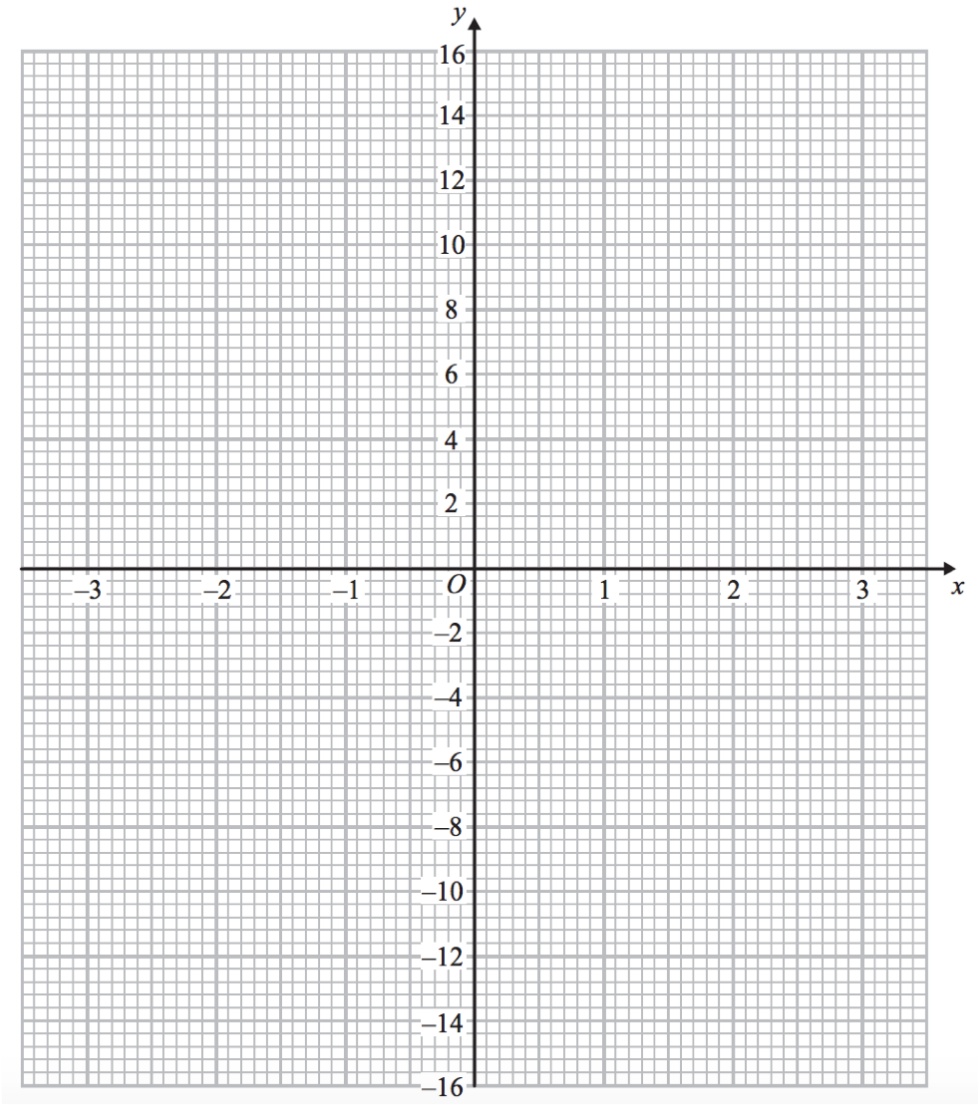
(2)

54. (a) Complete the table of values for $y = x^3 + 2x^2 - 1$

x	-3	-2	-1	0	1	2
y						

(2)

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



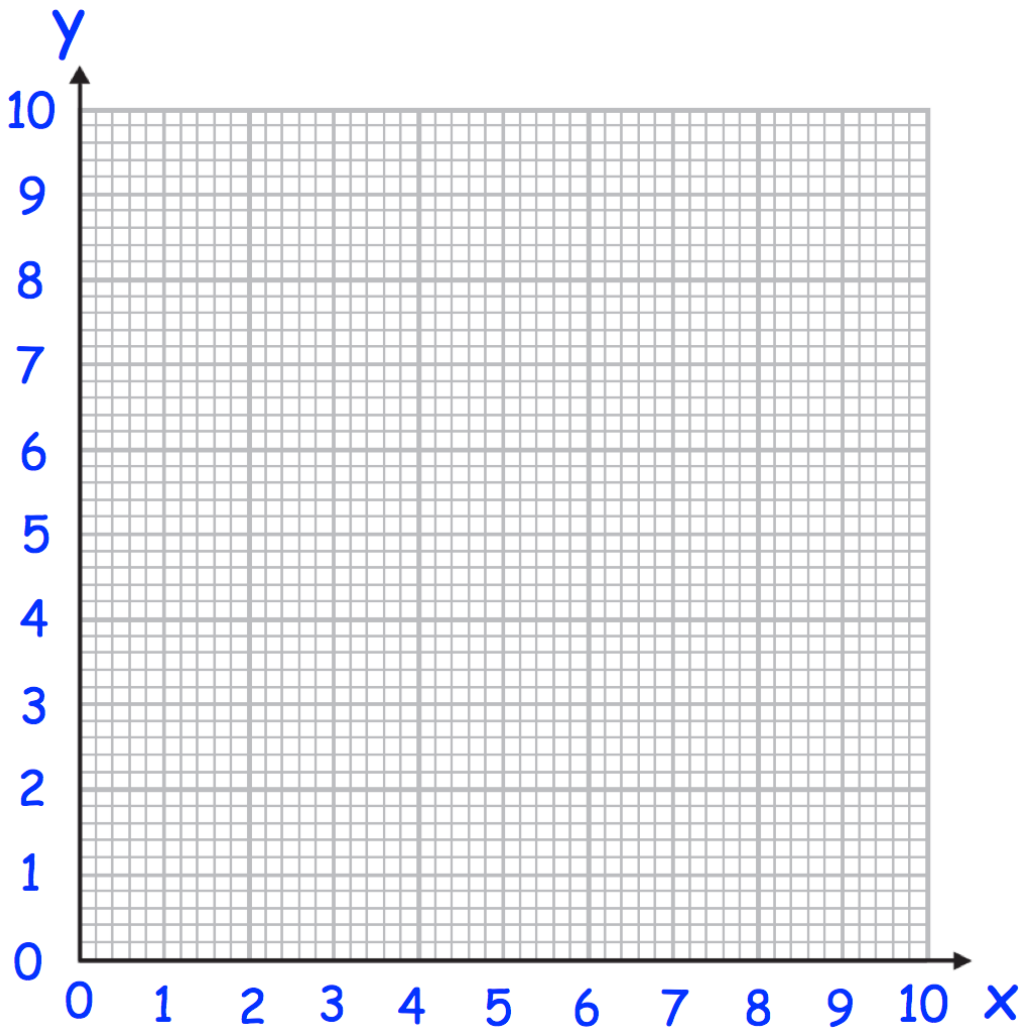
(2)

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

x	0.5	1	2	4	8	10
y						

(2)

(b) On the grid, draw the graph of $y = \frac{4}{x}$ for $0.5 \leq x \leq 10$



(2)

56. There are red and yellow sweets in a bag.

The ratio of red sweets to yellow sweets is 3:5

What fraction of the sweets in the bag are yellow?

.....

(2)