Name	Date started	Target end date

WJEC GCSE Mathematics and Numeracy (Double Award) — Question Pack

Foundation linear equations and simple inequalities: solving for an unknown by performing the same operation on both sides, including equations with b

REVISE
.wales

F2.10 — Linear equations & simple inequalities

Spec 2.2.1, 2.2.3 — Unit 2 (no calculator)

Foundation linear equations and simple inequalities: solving for an unknown by performing the same operation on both sides, including equations with brackets or unknowns on both sides, and the special rule that an inequality reverses when both sides are multiplied or divided by a negative. Sourced from legacy WJEC GCSE Mathematics-Numeracy Foundation papers (3300U10/U20) and accessible content from Intermediate papers (3300U30/U40), organised for revision under the 2025 spec.

2025 SPECIFICATION

Estimated time for entire question pack: ~2 hours 48 minutes

*Derived from the GCSE Higher pace of **~1.5 min/mark** (112 marks across 62 questions).*

*You are advised to **not** attempt to complete all of this in one sitting.*

ABOUT THIS QUESTION PACK

This is a **focused single-topic practice pack**, not a single mock paper. Questions are organised against the 2025 specification.

Questions are ordered chronologically by sitting, with custom-written and SAM questions at the end.

INSTRUCTIONS

Use black ink or black ball-point pen. Show all working — method marks are awarded for clear setup.

*A calculator is **not** permitted on any question in this pack (Unit 2 is the non-calculator paper).*

Linear equations & simple inequalities — what the new spec asks

WJEC GCSE Mathematics (first teaching 2025) · Unit 2: non-calculator.

Solving linear equations 2.2.1

- Solve one- and two-step linear equations.
- Solve equations with brackets by expanding first.
- Solve equations with the unknown on both sides.

Solving simple inequalities 2.2.3

- Solve linear inequalities using the balance method.
- Reverse the inequality when multiplying/dividing by a negative.
- Represent the solution set on a number line.

Checking solutions 2.2.1

- Substitute the solution back into the original equation.
- Verify inequalities by testing a value in the solution region.
- Identify and correct common arithmetic slips.

Exam strategy 2.2

- Non-calculator — write each balancing step.
- Underline the symbol; don't turn ≤ into = by accident.
- Read the demand: solve, list integers, or sketch?

Crib sheet »

Linear equations & simple inequalities in one page

Quick-reference notes — revisit before each question. Don't use during the questions.

Balance method

Whatever you do to one side, do to the other.

Aim to isolate x on one side.

One- and two-step equations

$$3x + 4 = 19 \Rightarrow 3x = 15 \Rightarrow x = 5$$

Undo + and − first, then × and ÷.

Brackets and unknowns both sides

Expand brackets first, then collect x-terms on one side.

2(x + 3) = x + 11 ⇒ 2x + 6 = x + 11 ⇒ x = 5.

Inequality symbols

< less than · ≤ less than or equal · > greater than · ≥ greater than or equal.

Flipping the inequality

$$\times \text{ or } \div \text{ by a negative} \Rightarrow \text{flip the sign}$$

−2x > 6 ⇒ x < −3.

Number-line representation

Open circle for < or >, closed circle for ≤ or ≥. Arrow shows the direction of solutions.

Examiner only

7. *(a)* Solve these equations.

(i) $7x = 56$ [1]

(ii) $y + 19 = 83$ [1]

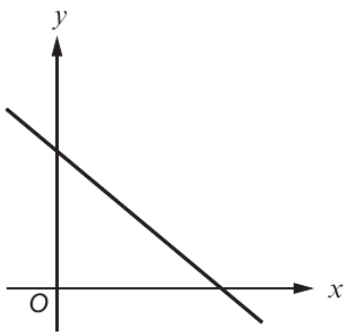
(b) Simplify the expression $12k - 15k + 7k$. [1]

8. *(a)* Write down the value of 9^2. [1]

(b) Work out $1{\cdot}2 \times 70$. [1]

Examiner only

13. *(a)*



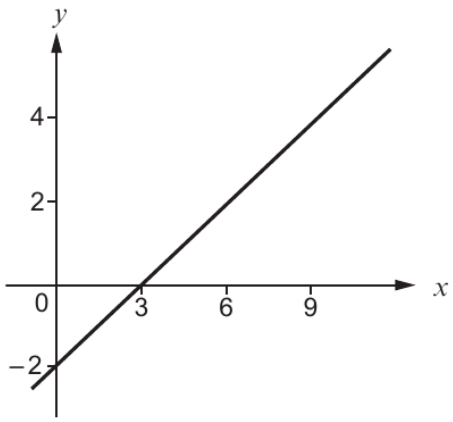
Which **one** of the following equations could represent the line shown in the graph above?
Circle your answer. [1]

$y = -x - 2$ $y = -x + 2$ $y = x + 2$ $y = x - 2$ $y = -x.$

(b) Which **one** of the following points lies on the line $2y = 3x + 4$?
Circle your answer. [1]

(2, –5) (5, 2) (–2, 5) (2, 5) (–2, –5)

(c)



What is the gradient of the line shown in the graph above?
Circle your answer. [1]

$\frac{3}{2}$ $-\frac{3}{2}$ $\frac{2}{3}$ $-\frac{2}{3}$ -6

Examiner only

17. Solve the following simultaneous equations using an algebraic (not graphical) method. [4]

$$3x + 4y = 7$$
$$2x - 3y = 16$$

Examiner only

7. Solve these equations.

(a) $6x = 42$ [1]

(b) $x + 9 = 28$ [1]

(c) $14 - x = 8$ [1]

Examiner only

11. Rhys wrote down four whole numbers.

The mode of the four numbers is 7.
The median of the four numbers is 6.
The range of the four numbers is 5.

What are the four numbers that Rhys wrote down?
You must show all your working. [3]

Rhys's numbers are ..... , ... , ... and .....

Examiner only

12. *(a)* Expand and simplify the following expression. [4]

$$x(5x - 2) - 3(x^2 - 2x + 7)$$

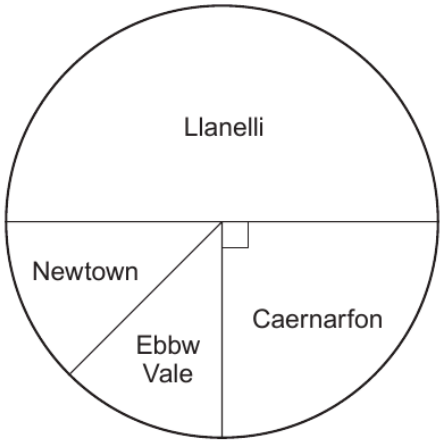
(b) Solve $\frac{22 - f}{3} = 6$. [3]

13. *(a)* A fair, six-sided dice is thrown twice.
What is the probability that a 3 is thrown on both occasions? [2]

Examiner only

(b) A company has offices in Llanelli, Caernarfon, Newtown and Ebbw Vale.
Its national committee is made up of workers from these four offices.

The pie chart below shows what fraction of the committee members come from each office.



There is an equal number of members from Newtown and Ebbw Vale.

A member is chosen at random from this committee to be its chairperson.

(i) The probability that the chosen member works at the Llanelli office is shown in the table below.

Complete the table. [2]

Office	Llanelli	Caernarfon	Newtown	Ebbw Vale
Probability	$\frac{1}{2}$			

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.....

(ii) What is the probability that the member chosen as chairperson works at either the Llanelli or the Ebbw Vale office?
You must show all your working. [2]

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Examiner only

19. *ABC* and *CDE* are two right-angled triangles.

In triangle *ABC*, *AB* = 6·5 cm and *BC* = 10·4 cm.
In triangle *CDE*, *CE* = 9·4 cm.

$B\hat{C}E = 22°$.
$A\hat{C}B = x°$.

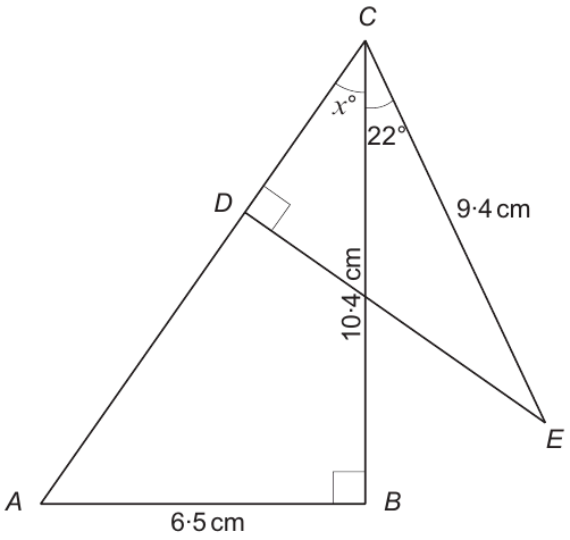

Diagram not drawn to scale

(a) Calculate the value of x. [3]

Examiner only

(b) Hence find the length of *DE*. [3]

END OF PAPER

Examiner only

(b) Use your scale drawing to calculate the **actual** length of side *BC*.
Give your answer in metres. [2]

Actual length of *BC* = ... metres

3. (a) Simplify the expression $15x - 2y - 7x - 4y$. [2]

(b) Solve the equation $2m - 7 = 12$. [2]

(c) Calculate the value of $5f + 3g$ when $f = -4$ and $g = 7$. [2]

Examiner only

5. *In this question, you will be assessed on the quality of your organisation, communication and accuracy in writing.*

ABC is an isosceles triangle and *ABP* is a straight line.
$AC = BC$ and $\hat{ACB} = 76°$.

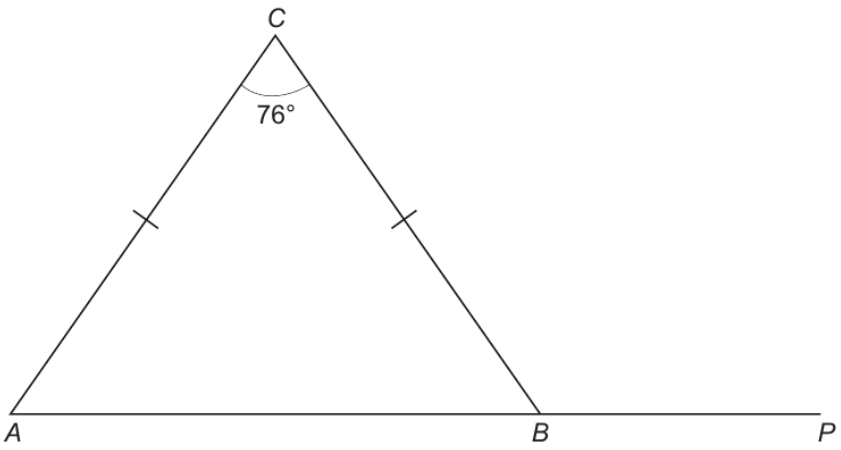

Diagram not drawn to scale

Calculate the size of $\hat{CBP}$.
You must show all your working. [3 + 2 OCW]

Examiner only

8.

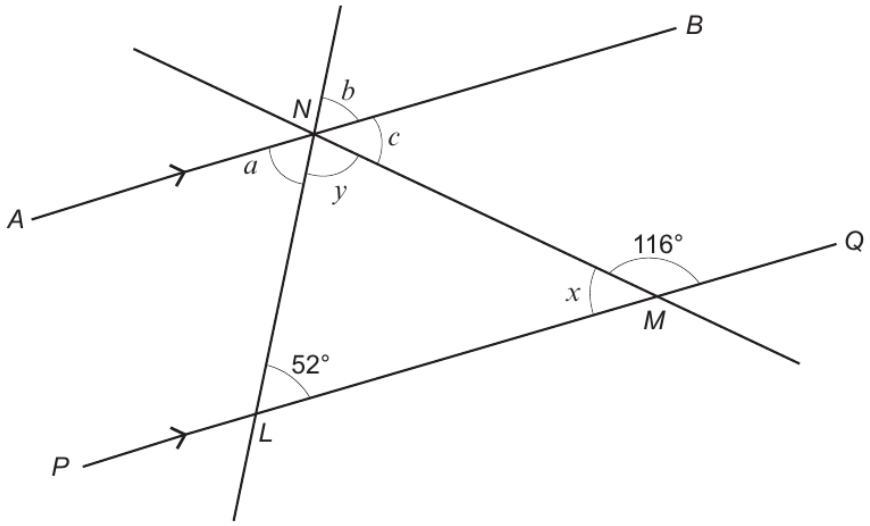

Diagram not drawn to scale

Line *AB* is parallel to line *PQ*.

(a) Find the size of each of the angles a, b and c. [3]

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a = ... ° b = ... ° c = ... °

Examiner only

(b) Find the size of each of the angles x and y.
Hence give the special name for triangle *LMN*. [3]

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x = ... ° y = ... °

The special name for triangle *LMN* is .....

Examiner only

12. Choose any number.

Show that $\frac{1}{5}$ of 25% of your number = $\frac{1}{4}$ of 20% of your number. [4]

Examiner only

12. The table below shows some of the values of $y = x^2 + 4x - 1$ for values of x from –5 to 2.

x	–5	–4	–3	–2	–1	0	1	2
$y = x^2 + 4x - 1$	4	–1	–4		–4	–1	4	

(a) Complete the table by finding the value of y for $x = -2$ and for $x = 2$. [2]

(b) On the graph paper opposite, draw the graph of $y = x^2 + 4x - 1$ for values of x from –5 to 2. [2]

(c) Draw the line $y = 2$ on the graph paper.
Write down the values of x where the line $y = 2$ cuts the curve $y = x^2 + 4x - 1$. [2]

Values of x are ..... and .....

Examiner only

14. *(a)* Simplify the expression $15x - 2y - 7x - 4y$. [2]

(b) Solve the equation $2m - 7 = 12$. [2]

(c) Calculate the value of $5f + 3g$ when $f = -4$ and $g = 7$. [2]

Examiner only

15. *(a)* What is the gradient of the straight line with equation $6y = 3x + 7$?
Circle the correct answer. [1]

$\frac{1}{2}$ 6 2 3 $\frac{7}{6}$

(b) What is the value of y at the point where the line $5x + y + 3 = 0$ crosses the y-axis?
Circle the correct answer. [1]

0 –5 3 –3 $\frac{5}{3}$

(c) What are the coordinates of the point where the lines with equations $x + y = 7$ and $x - y = 3$ intersect?
Circle the correct answer. [1]

(4, 3) (7, 4) (5, 2) (3, 7) (−5, 2)

Examiner only

5. In this question, you must use only the numbers 3 and 7 to make other numbers.
You must only add or subtract.

For example, if we wanted an answer of 11, we could write

$$7 + 7 - 3 = 11.$$

Show how you can get each of the following answers.

(a) 2 [1]

Write your solution in the box below.

= 2

(b) 8 [1]

Write your solution in the box below.

= 8

(c) 19 [1]

Write your solution in the box below.

= 19

Examiner only

8. *(a)* Simplify $8p - 12p + 9p$. [1]

(b) Solve the following equations.

(i) $6x = 48$ [1]

(ii) $32 - y = 17$ [1]

(c) Tom thinks of a number.
He multiplies the number by 4.
The answer is 76.
What number did Tom think of? [1]

Examiner only

13. A Venn diagram is used to show the following information:

- The Universal set, **Ɛ**, is the set of numbers from 10 to 20 inclusive.
- Set A = {11, 13, 14, 18, 20}.
- Set B = {multiples of 3}.

Draw the Venn diagram that shows the above information. [4]

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Examiner only

17. Arthur, Sian and Kezia are all given some £1 coins.

Arthur receives £n.
Sian is given five times as much money as Arthur.
Kezia receives three times as much money as Arthur, plus an extra £7.

Sian was given less money than Kezia.

(a) Write down an inequality in terms of n that illustrates the fact that Sian received less money than Kezia. [2]

(b) What was the greatest amount of money that Arthur could have been given? [2]

Examiner only

1. Complete each row of the following table.
The first row has been completed for you. [3]

Place	Temperature at 10 a.m.	Change	Temperature at 6 p.m.
Cwmbran	2°C	Down 4°C	−2°C
Llanelli	−3°C	Down 1°C	
Llanidloes	−4°C		−1°C
Porthmadog		Up 4°C	3°C

2. Write 7%, $\frac{3}{5}$ and 0·3 in ascending order.

You must show all your working. [3]

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Smallest value ⟶ Greatest value

Examiner only

7. *(a)* Solve these equations.

(i) $7x = 56$ [1]

(ii) $23 - x = 9$ [1]

(b) (i) Sian has n boxes.
Each box contains 8 pens.
How many pens does Sian have altogether? [1]

Number of pens is .....

(ii) Meic had m CDs.
He gave 3 CDs to a friend.
How many CDs does Meic have now? [1]

Number of CDs is .....

Examiner only

8. *(a)* Solve the following equations.

(i) $\frac{x}{9} = 4$ [1]

(ii) $4(3x + 2) = 12$ [3]

(b) Factorise each of the following.

(i) $14a + 21$ [1]

(ii) $f^2 - f$ [1]

Examiner only

10.

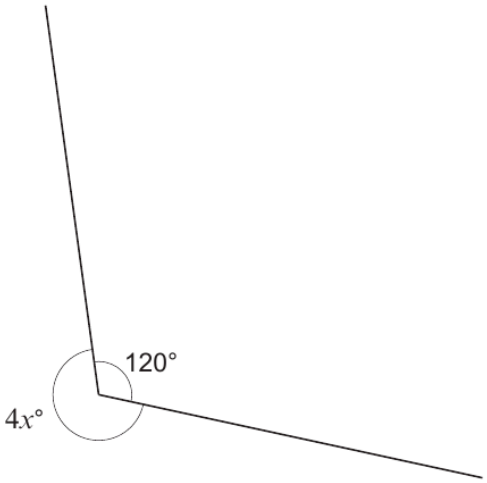

Diagram not drawn to scale

Calculate the value of x. [3]

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x = ...

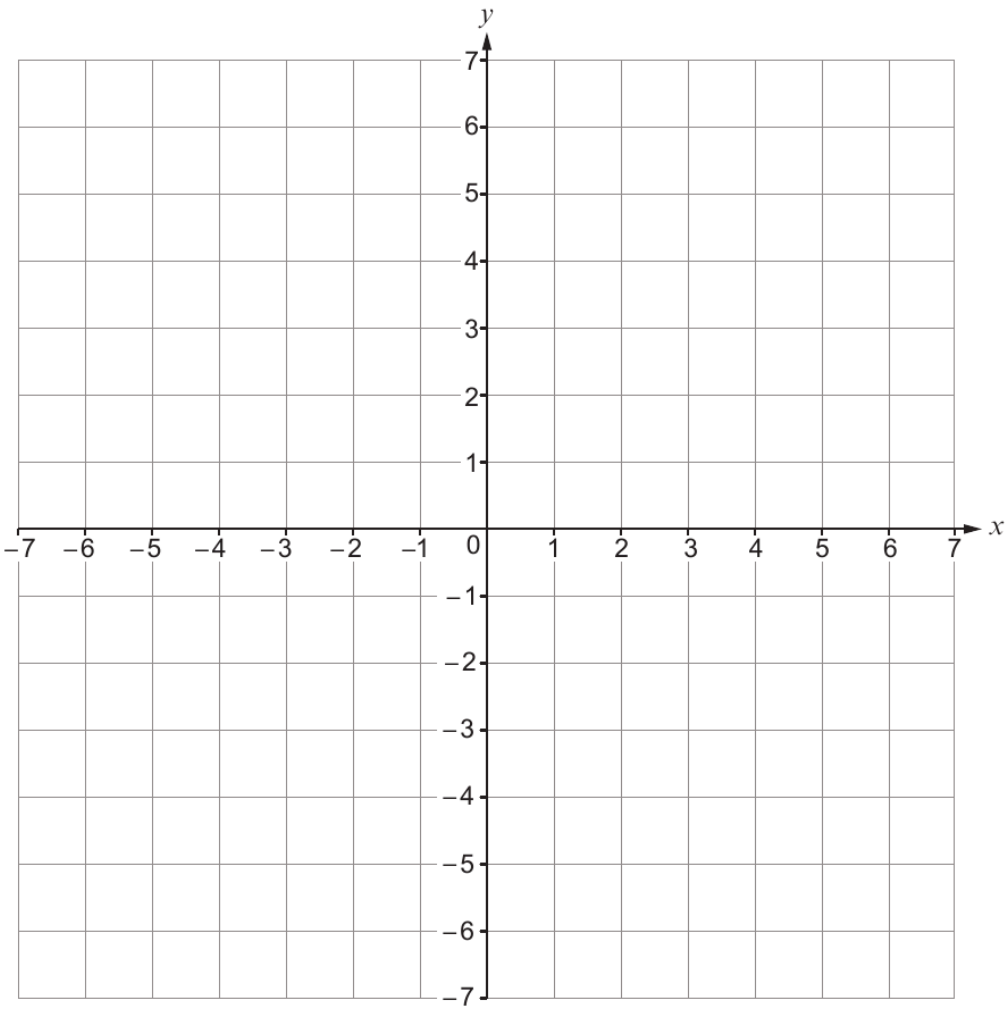
Examiner only

19. *(a)* Factorise $x^2 + 4x - 21$. Hence, solve $x^2 + 4x - 21 = 0$. [3]

(b) Solve the equation $\frac{2x-3}{5} + \frac{4x+5}{2} = \frac{11}{2}$. [4]

Examiner only

2. *(a)* Draw the line $x = -4$ on the grid below. [1]

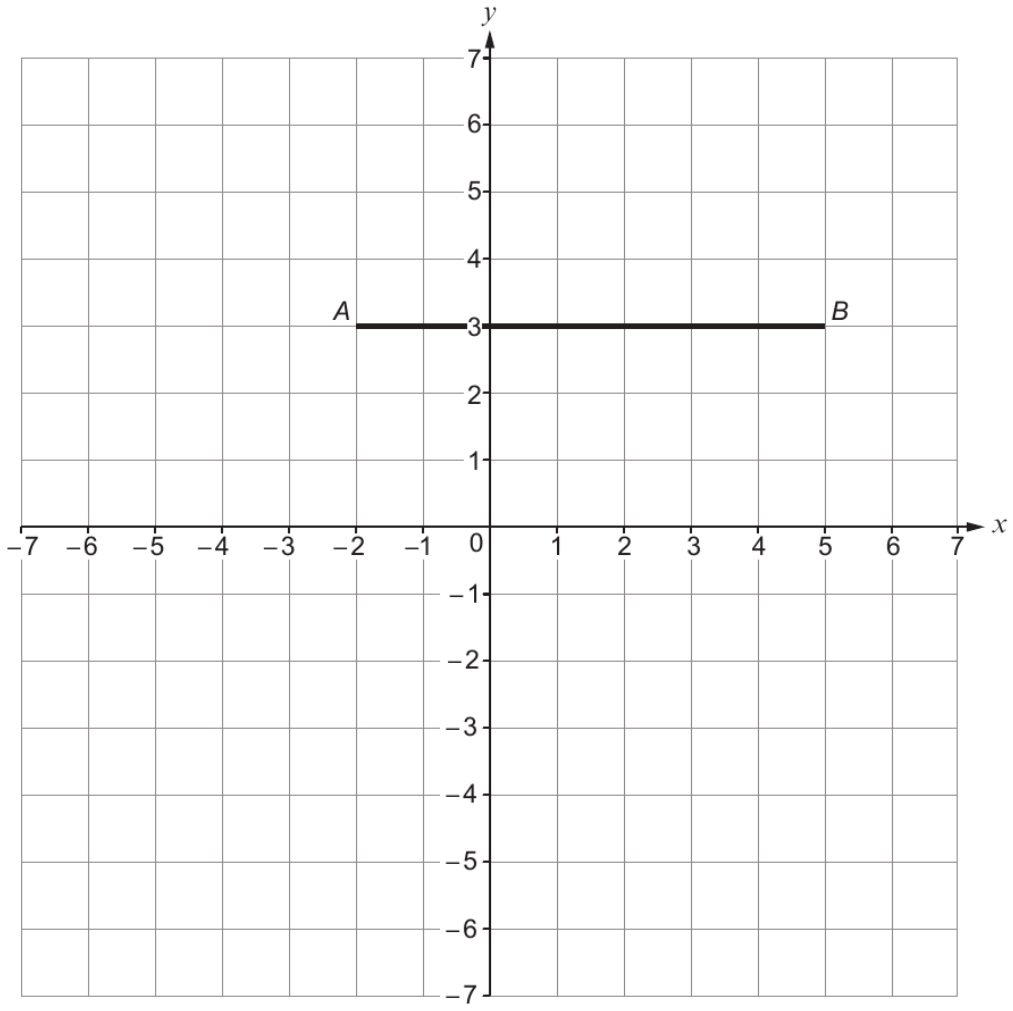


Examiner only

(b) *C* is a point on the grid below so that:

- $\widehat{BAC} = 90°$,
- $AC = AB$.

(i) Show the position of point *C* **on the grid**. [2]



(ii) Write down the coordinates of point *C*. [1]

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Examiner only

5. *(a)* Solve the equation $4x + 7 = 10$. [2]

(b) Simplify $8d - 6e - 3d + 4e$. [2]

6. *PQ* and *RS* are parallel.

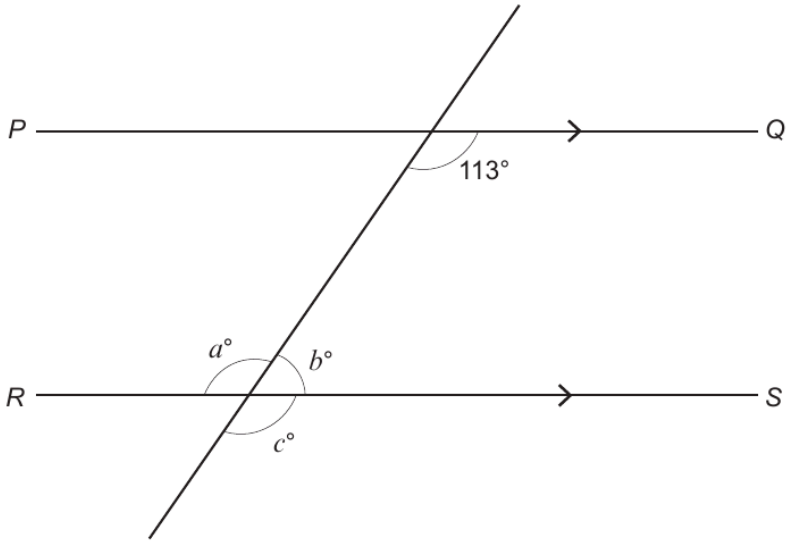


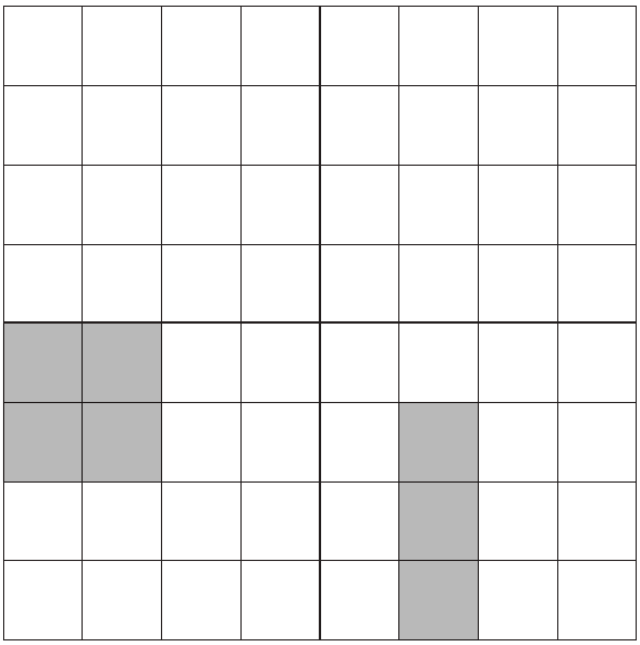
Diagram not drawn to scale

Find the values of a, b and c. [3]

$a =$ ..... $b =$ ..... $c =$ .....

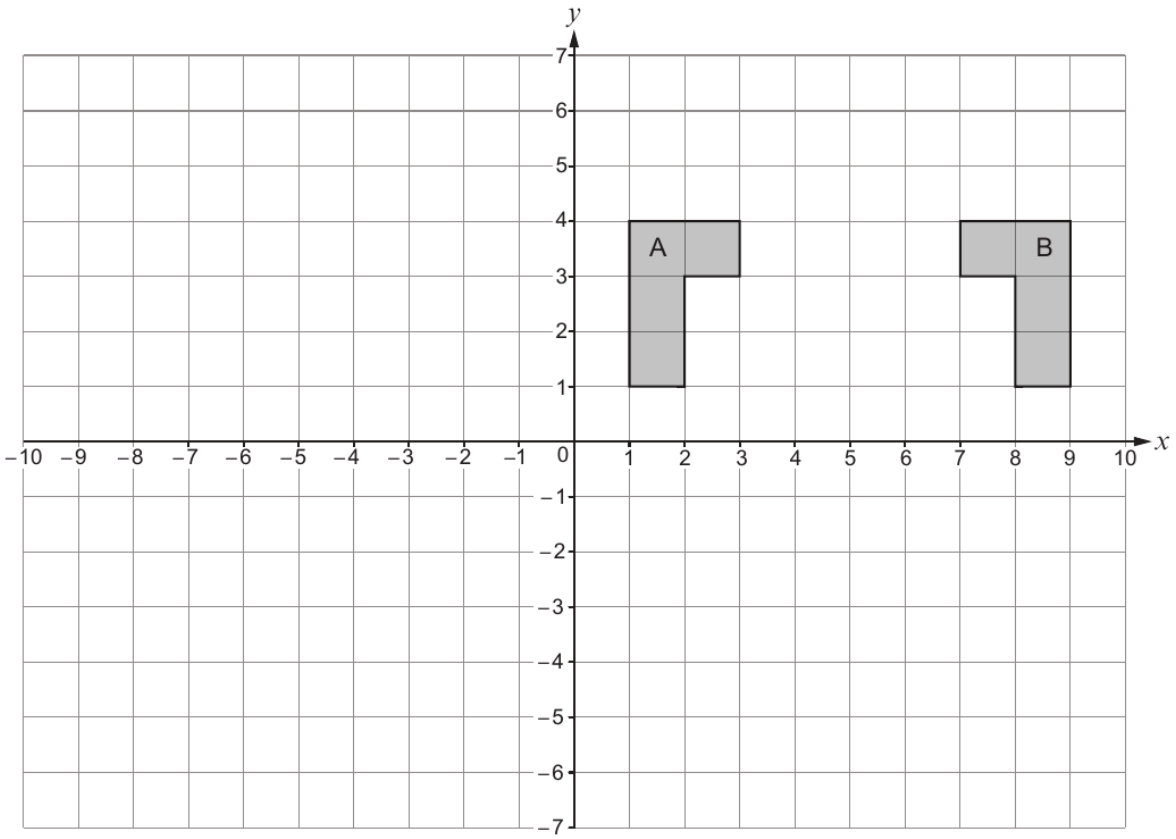
Examiner only

5. *(a)* Shade the least number of squares so that the grid has rotational symmetry of order 2. The squares you shade must be in the upper two quadrants. [2]



Examiner only

(b) Describe fully the **single** transformation that transforms shape A onto shape B. [2]



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Examiner only

9. *(a)* Simplify the expression $9g - 5g + 12g$. [1]

(b) Solve the equation $5y = 45$. [1]

(c) Solve the equation $w - 16 = 14$. [1]

(d) Solve the equation $4x + 7 = 10$. [2]

Examiner only

12. A solution of the equation

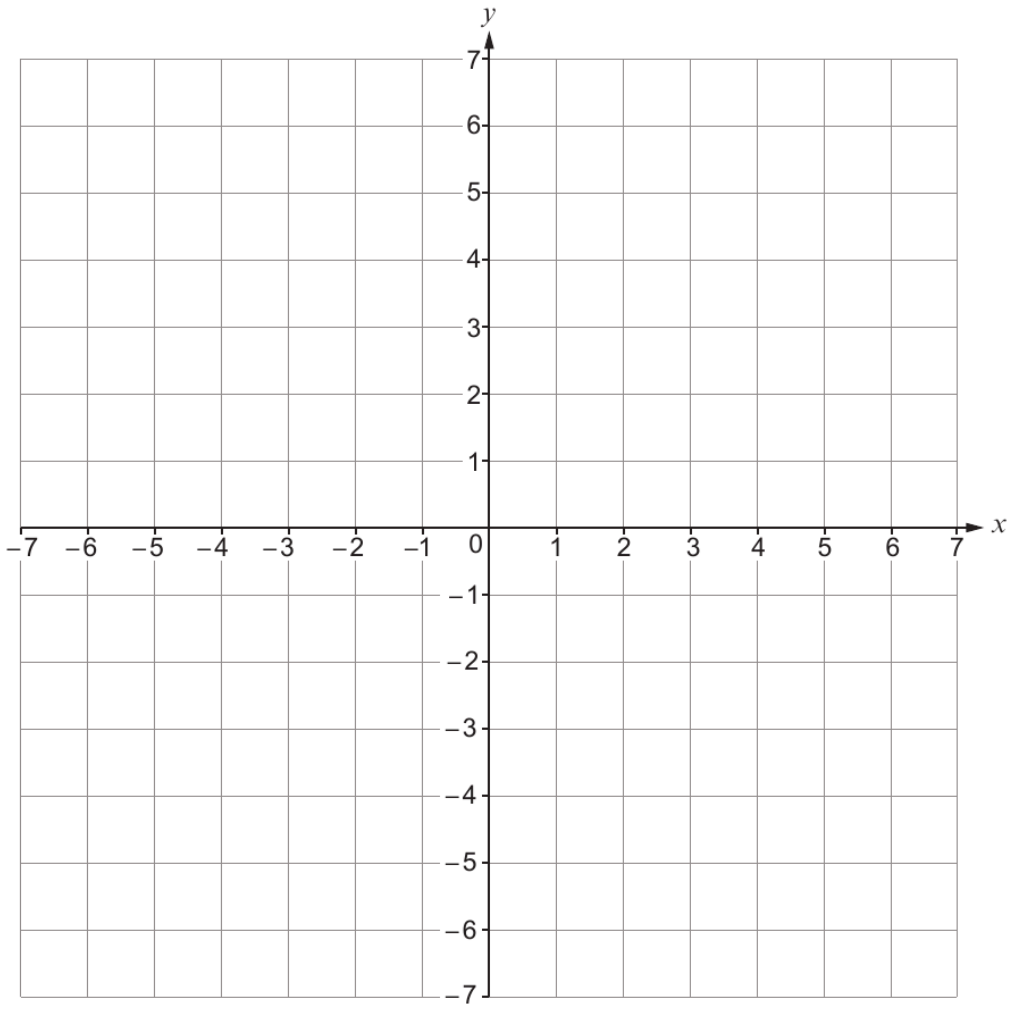
$$x^3 - 5x - 350 = 0$$

lies between 7·2 and 7·3.

Use the method of trial and improvement to find this solution correct to 2 decimal places. You must show all your working. [4]

Examiner only

14. *(a)* Draw the line $x = -4$ on the grid below. [1]

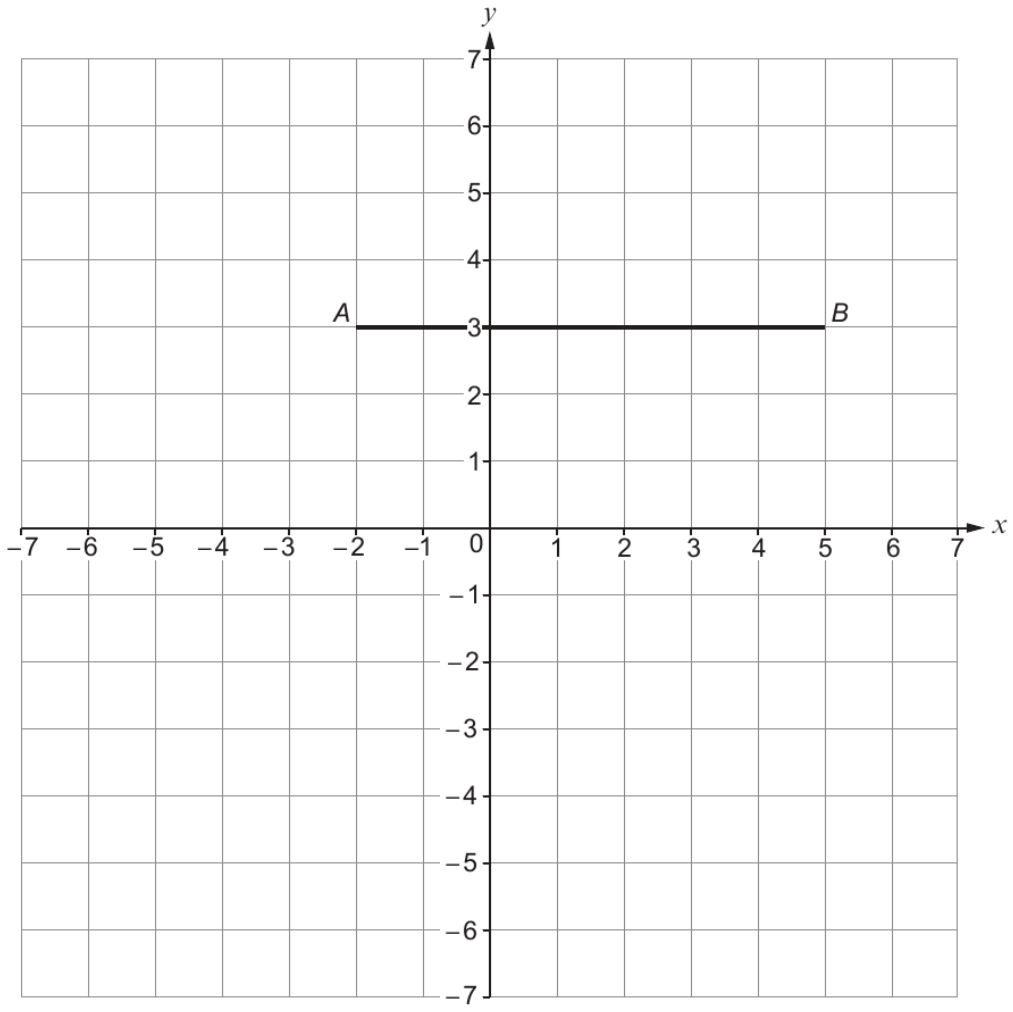


Examiner only

(b) *C* is a point on the grid below so that:

- $\widehat{BAC} = 90°$,
- $AC = AB$.

(i) Show the position of point *C* **on the grid**. [2]



(ii) Write down the coordinates of point *C*. [1]

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Examiner only

14. The table below shows some of the values of $y = x^2 - 4x - 3$ for values of x from –2 to 5.

x	−2	–1	0	1	2	3	4	5
$y = x^2 - 4x - 3$		2	−3	−6		−6	−3	2

(a) Complete the table by finding the value of y for $x = -2$ and the value of y for $x = 2$. [2]

(b) On the graph paper opposite, draw the graph of $y = x^2 - 4x - 3$ for values of x from –2 to 5. [2]

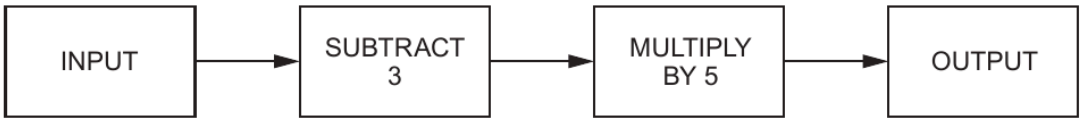
(c) Draw the line $y = 1$ on the graph paper.
Write down the values of x where the line $y = 1$ cuts the curve $y = x^2 - 4x - 3$. [2]

Values of x are ..... and .....

Examiner only

14. *(a)* Solve $5(2x + 3) = 20$. [3]

(b) A number machine is shown below.



Write down an expression for the OUTPUT when the INPUT is n. [2]

Examiner only

15. *(a)* Is it possible for an isosceles triangle to have an angle of 140°?
Circle your answer.
You **must** give an explanation for your answer. [1]

YES NO

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(b)

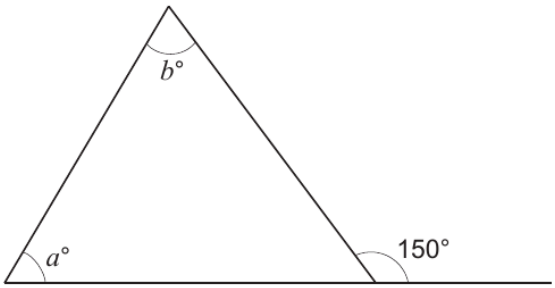


Diagram not drawn to scale

Which of the following equations is correct for the diagram shown above?
Circle your answer. [1]

$a + b = 30$ $a + b = 210$ $b - a = 150$

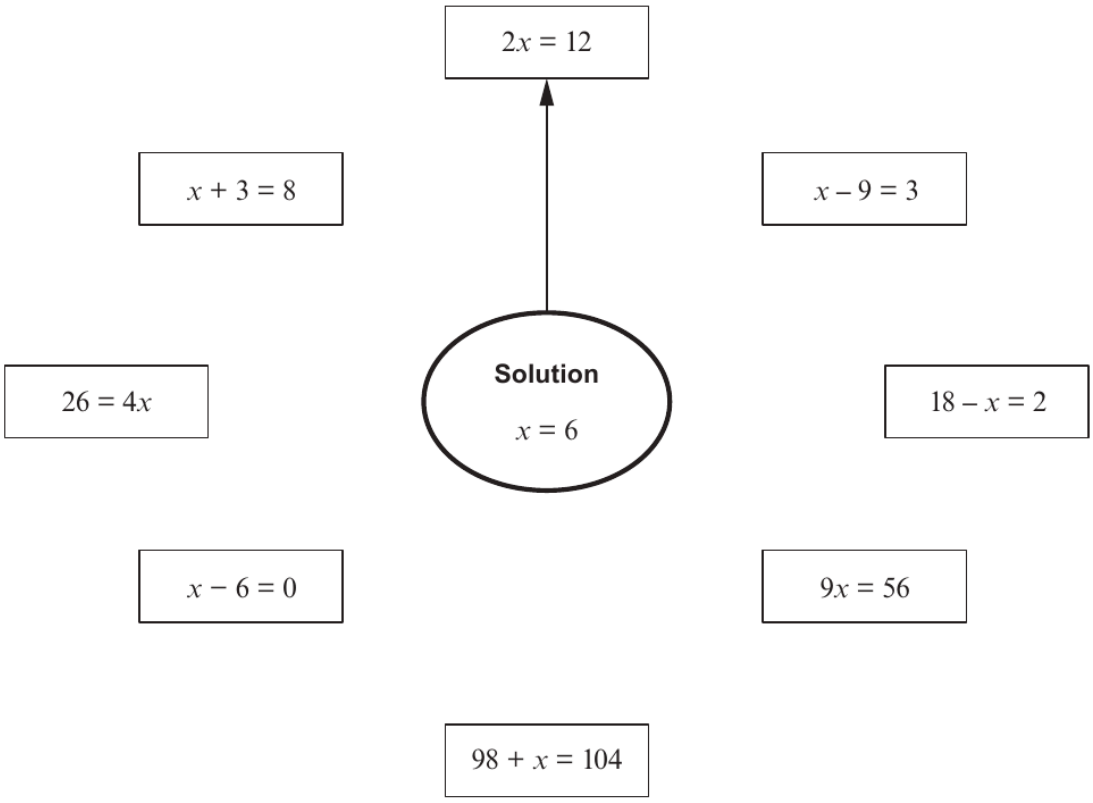
$a - b = 150$ $a + b = 150$

Examiner only

7. The solution to three of the following equations is $x = 6$.

For example, the solution to the equation $2x = 12$ is $x = 6$.
The solution has already been matched to this equation with an arrow.

Match the solution, $x = 6$, to the **other two equations** for which it is the correct solution. [2]



Space for working:

Examiner only

6. *(a)* Write the next term in the sequence below. [1]

2, 26, 50, 74, ...

(b) Describe the rule for continuing the following sequence. [1]

77, 64, 51, 38, 25, ...

Rule:

.....

.....

(c) A dog is x years old.
Another dog is 2 years younger.
Write down, in terms of x, the age of the younger dog. [1]

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7. Gwenan writes down four numbers:

64 89 83 26

(a) Calculate the mean of Gwenan's numbers. [3]

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(b) Every number in Gwenan's list is increased by 1.
What is the mean of her new list of numbers? [1]

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Examiner only

15. *(a)* (i) Expand $x(x^2 + 7)$. [2]

(ii) Expand and simplify $(x - 5)(3x - 4)$. [2]

(b) Sarah buys and sells antique clocks.
On Monday, Sarah had n clocks.
At the end of the day on Tuesday, she had 5 times as many clocks as she had on Monday.
On Wednesday, she sold 27 clocks.

(i) At the end of the day on Wednesday, Sarah had fewer clocks than she had on Monday.
Write an inequality, in terms of n, that shows this information. [2]

(ii) Solve your inequality to find the greatest number of clocks that Sarah could have had on the Monday. [3]

Examiner only

16. *AB* and *CD* are parallel.

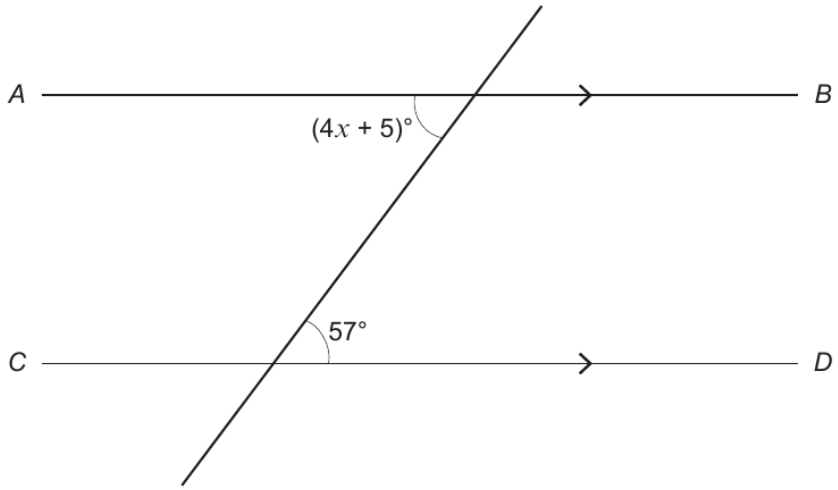


Diagram not drawn to scale

Calculate the value of x. [3]

17. Write down four positive whole numbers in the boxes below so that:

- the range of the numbers is 6,
- the mean of the numbers is 5,
- the median of the numbers is 4. [3]

Examiner only

16. *(a)* A number, when increased by 4%, is equal to N.
Which of the following calculations would give you the original number?
Circle your answer. [1]

$N \times 1{\cdot}04$ $N \div 1{\cdot}04$ $N \times 1{\cdot}4$ $N \div 1{\cdot}4$ $N - 4$

(b) The number shown on each diagram below is 20% greater than the number shown on the previous diagram.

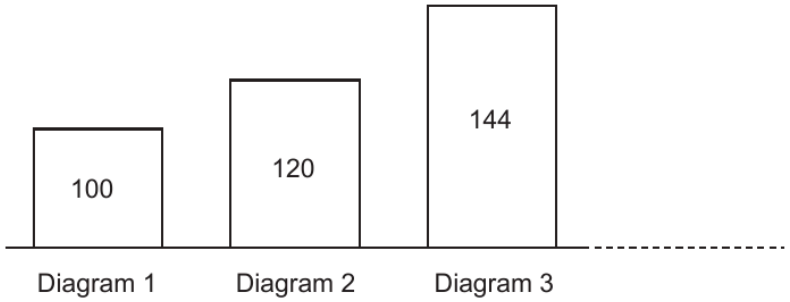


Diagram not drawn to scale

Find the number that should be shown on Diagram 6. [2]

Examiner only

7. (a) Simplify $12a - 19a + 10a$. [1]

(b) Solve the following equations.

(i) $3y = 189$ [1]

(ii) $27 - x = 15$ [1]

(c) Write down the value of $\sqrt{36}$. [1]

8. A sack contains 5·4 kg of potatoes.
A second sack contains 3·08 kg of potatoes.
A third sack contains 2·2 lb **(pounds)** of potatoes.

Calculate the total mass of these potatoes.
Give your answer in **kilograms**. [3]

Examiner only

11. The table below shows some of the values of $y = x^2 + x - 4$ for values of x from –3 to 3.

x	–3	–2	–1	0	1	2	3
$y = x^2 + x - 4$	2	–2		– 4		2	8

(a) Complete the table by finding the values of y for $x = -1$ and for $x = 1$. [2]

(b) On the graph paper opposite, draw the graph of $y = x^2 + x - 4$ for values of x from –3 to 3. [2]

(c) Use your graph to solve the equation $x^2 + x - 4 = 0$.
Give your answers correct to 1 decimal place. [1]

$x =$ ..... or $x =$ .....

Examiner only

12. (a) Factorise $8x^2 + 6xy$. [2]

(b) (i) Factorise $x^2 + 13x + 40$. [2]

(ii) Explain how you can check that your answer to part (i) is correct. [1]

Examiner only

17. Solve the following equation. [3]

$$8x - 38 = 17 - 3x$$

Examiner only

4. A cuboid is to be drawn on the isometric grid below.
Find a possible length, width and height for the cuboid, such that:

- the cuboid has a volume of $12\,cm^3$
- each of the length, width and height is a whole number of centimetres.

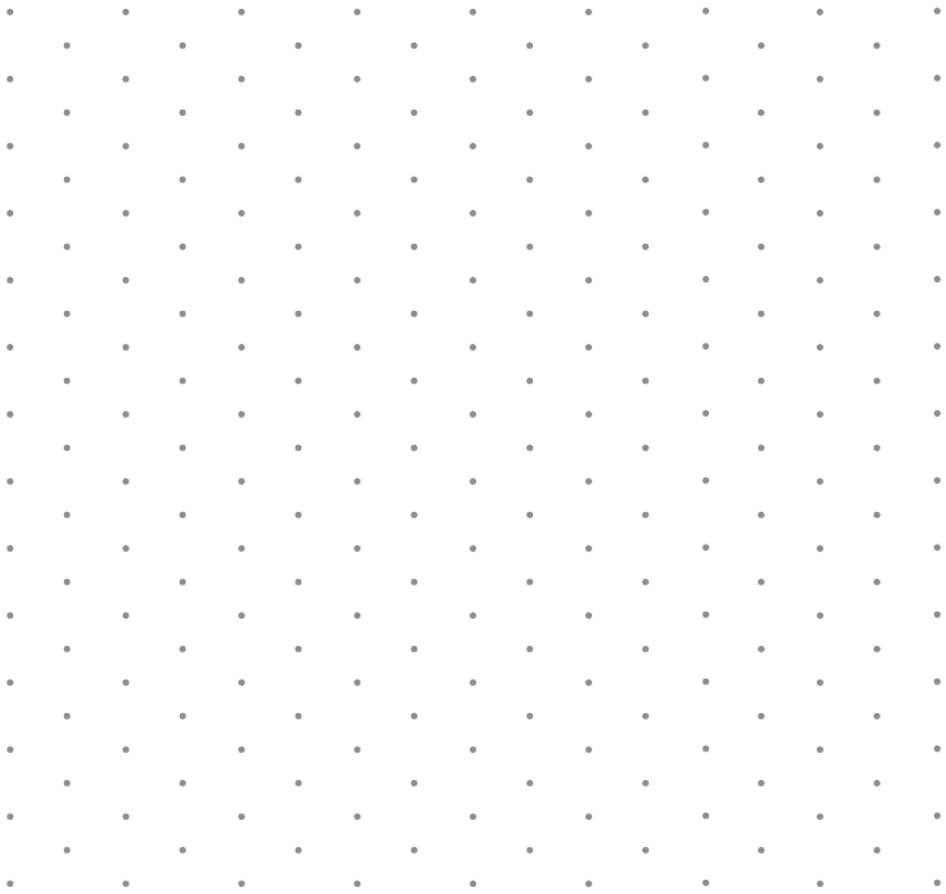
Write the length, width and height of your cuboid in the spaces below.
Use the grid below to draw an isometric representation of your cuboid. [3]

.....

.....

.....

Length = ... cm Width = ... cm Height = ... cm



Examiner only

10. (a) Express 21·76 as a percentage of 32. [2]

(b) Solve $5t + 3 = 3t + 14$. [3]

Examiner only

14. Two friends, Geraint and Dyfrig, are having a discussion.

(a) Geraint says,

"All prime numbers are odd numbers."

Explain why Geraint is incorrect. [1]

(b) Dyfrig says,

"All cube numbers are odd numbers."

Explain why Dyfrig is incorrect. [1]

Examiner only

18. (a) Express 21·76 as a percentage of 32. [2]

(b) Solve $5t + 3 = 3t + 14$. [3]

END OF PAPER

Examiner only

7. (a) What is the special name given to an angle greater than 0° and less than 90°? [1]

.....

(b) What is the special name of a quadrilateral with rotational symmetry of order four? [1]

.....

8. (a) Describe **in words** the rule for continuing each of the following sequences.

(i) 62, 51, 40, 29, … [1]

Rule:

.....

.....

(ii) 2, 8, 32, 128, … [1]

Rule:

.....

.....

(b) Solve the following equations.

(i) $4x = 124$ [1]

.....

.....

(ii) $w + 6{\cdot}9 = 110$ [1]

.....

.....

9. (a) Calculate $\frac{3}{8}$ of 142. [2]

Write your answer as a decimal.

.....

.....

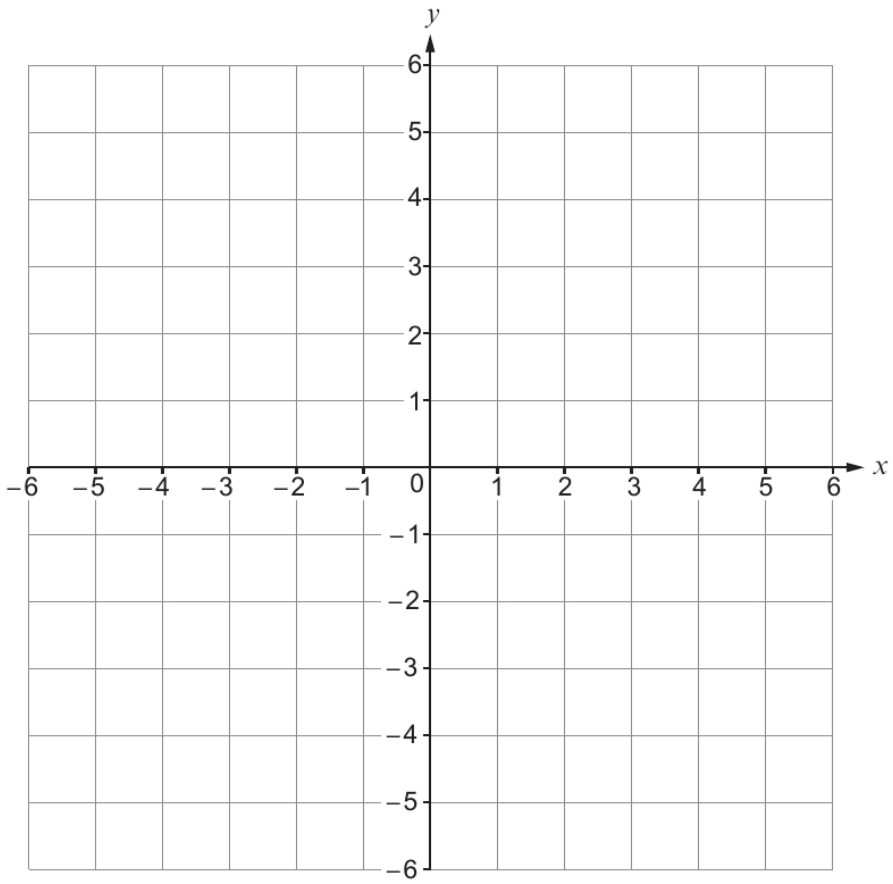
Examiner only

10. *ABCD* is a rectangle.

A is the point (3, 4), *B* is the point (–5, 4), *C* is the point (–5, –2) and *D* is the point (3, –2).

What is the perimeter of *ABCD*?

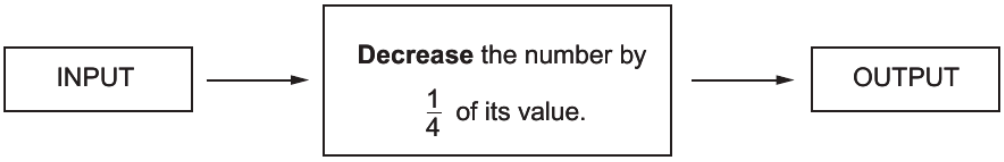
You may use the centimetre-squared grid below to help you. [5]



Perimeter of *ABCD* = ... cm

Examiner only

10. A number machine is shown below.



For a given INPUT number, there will be an OUTPUT number.
The OUTPUT is then put back in the number machine as the next INPUT.
This process is then repeated many times.

The first INPUT number is 512.
What will be the first OUTPUT number that is less than 300? [4]

First OUTPUT number that is less than 300 = ...

Examiner only

11. (a) Solve the equation $7+5(x-2)=3x+8$. [3]

(b) Make f the subject of the formula $h=13-2f$. [2]

(c) Factorise $15x-35y$. [1]

Examiner only

20. XY is a tangent to a circle, centre O, at the point A.
$\hat{AYO} = 54°$.

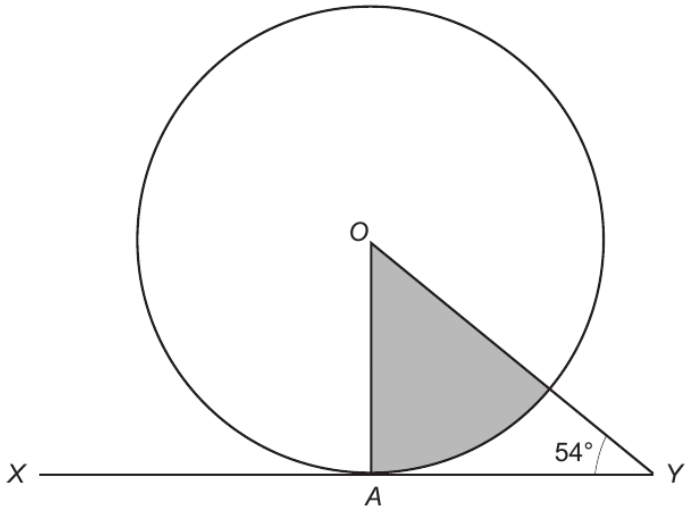


Diagram not drawn to scale

(a) What percentage of the whole circle is shaded?
You **must** show how you calculated your answer. [3]

(b) What tangent property of circles did you use in order to answer part (a)? [1]

END OF PAPER

Examiner only

7. (a) Solve the following equations.

(i) $p + 17 = 29$ [1]

(ii) $52 - n = 38$ [1]

(b) How many centimetres are there in 24·8 metres? [1]

8.

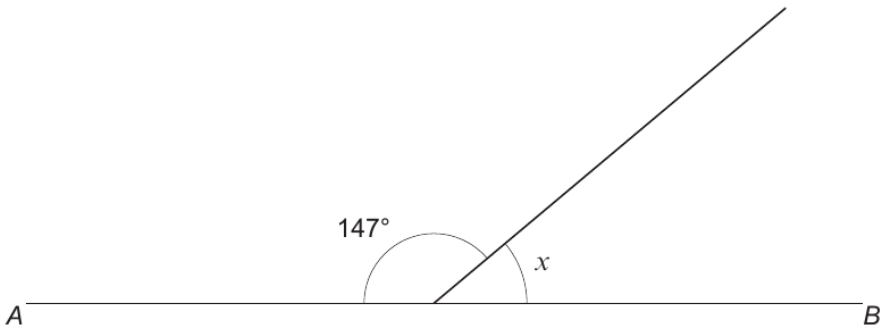


Diagram not drawn to scale

AB is a straight line.

Calculate the size of angle x. [2]

x = ... °

Examiner only

7. Write 27 minutes and 11 seconds in **seconds**. [2]

27 minutes and 11 seconds = ... seconds

8. (a) Find the value of $\frac{144 \times 30^2}{18}$.

Write your answer correct to the nearest thousand. [2]

(b) Calculate 4% of £250. [2]

(c) Laura thinks of a number.

$\frac{1}{5}$ of her number is 14.

What is 50% of Laura's number? [3]

50% of Laura's number is .....

Examiner only

9. Write an expression, in terms of x, to represent each of the following.

(a) 5 more than x [1]

(b) x less than 3 [1]

(c) half of x [1]

10. (a) What is 2 litres approximately equal to?
Circle your answer. [1]

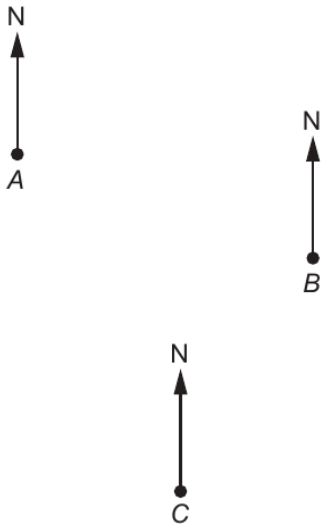
2 pints 3 pints 3·5 pints 4·4 pints 200 pints

(b) What is 32 km approximately equal to?
Circle your answer. [1]

16 miles 20 miles 32 miles 51 miles 64 miles

Examiner only

12. The diagram below shows the positions of three points *A*, *B* and *C* on a map.
The diagram is drawn to scale.

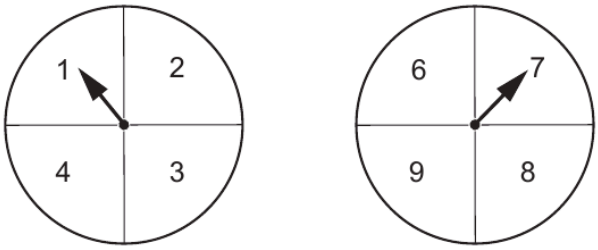


(a) Find the bearing of *B* from *A*. [1]

(b) Find the bearing of *A* from *C*. [1]

Examiner only

15. Vera has two fair spinners.
Each spinner is divided into quarters.
One spinner shows the values 1, 2, 3 and 4.
The other spinner shows the values 6, 7, 8 and 9.



Vera spins the two spinners. She then multiplies the two values together to form a product.
For example, the diagram above forms the product $1 \times 7 = 7$.

Consider the ways in which all the possible products can be formed.
Calculate the probability that the spinners will form a product that is a factor of 36.
You must show all your working to justify your answer. [4]

Examiner only

5. In a game, each competitor will have 20 attempts at throwing a ball into a bucket.
They will get 1 point for every ball that lands in the bucket.

Sioned wants to keep a record of the total points for each competitor.
She decides to show the results in a table with the total points recorded in **groups of equal width**.

(a) She starts to draw a table using five groups, as shown below.

Total points	0 to 3	4 to 7	8 to 11	… to …	… to …
Number of competitors					

Explain why these groups will not be suitable. [1]

.....

.....

.....

(b) Sioned considers using the table shown below.
She decides that it is suitable for recording all the total points in **groups of equal width**.
Fill in the two missing numbers in the **top** row. [1]

Total points	0 to 6	7 to	..... to 20
Number of competitors			

.....

.....

Examiner only

(c) Finally, Sioned decides to use the groups shown in the table below.
The results for the first 100 competitors are shown in the table.

Total points	0 to 2	3 to 5	6 to 8	9 to 11	12 to 14	15 to 17	18 to 20
Number of competitors	5	10	17	22	23	12	11

One of these 100 competitors is chosen at random.

(i) What is the probability that this competitor scored 6, 7 or 8 points? [1]

.....

.....

(ii) Explain why the following statement may be incorrect. [1]

The probability that this competitor scored 19 points is $\frac{11}{100}$.

.....

.....

.....

Examiner only

7. (a) Simplify $5k - 8k + 6k$. [1]

(b) Solve these equations.

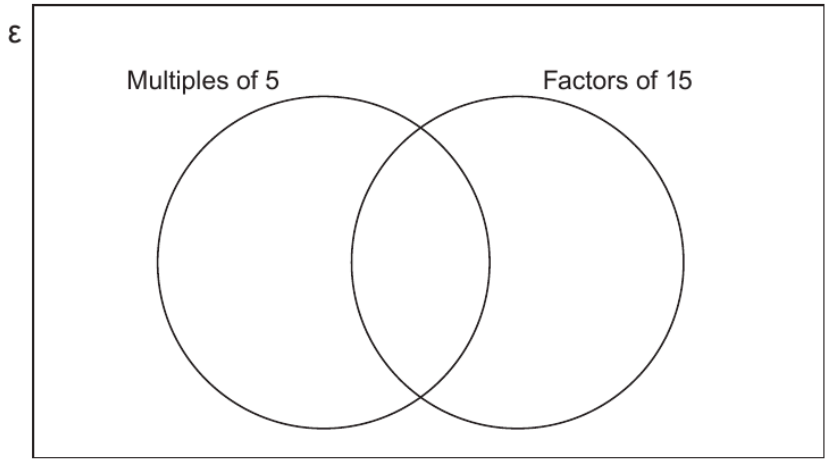
(i) $15 + x = 60$ [1]

(ii) $20 - y = 9$ [1]

(iii) $6w = 54$ [1]

8. The Venn diagram below is used to show
- multiples of 5
- factors of 15.

Place the numbers **1**, **3**, **5**, **10** and **15** in the Venn diagram. [2]



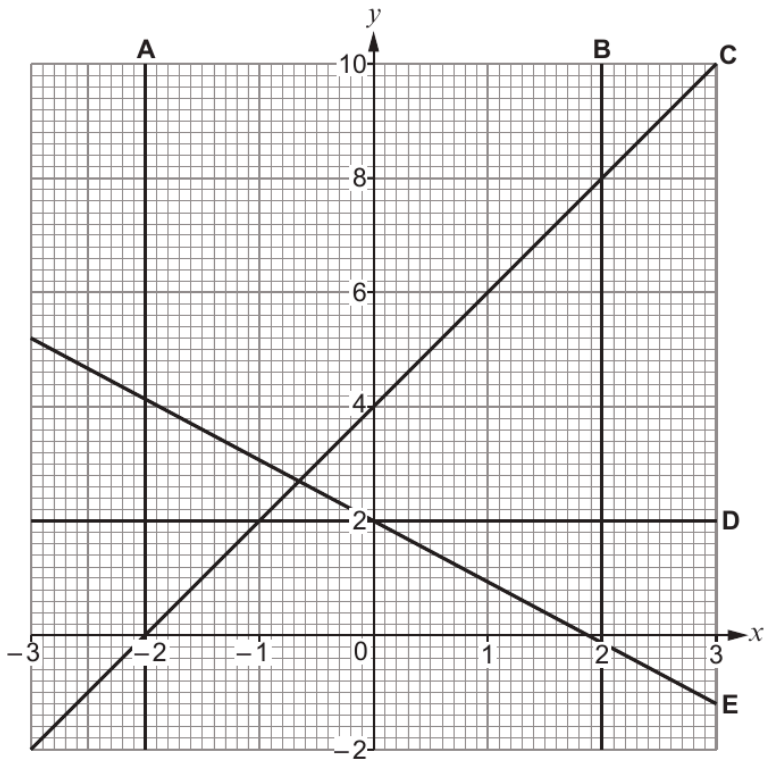
Examiner only

3. (a) Simplify the expression $7g - 8f - 4g + 3f$. [2]

(b) Use the formula $F = 5T + 4R$ to find the **value of R** when F = 23 and T = 3. [3]

(c) Which of the lines below is represented by the equation $y = 2$?
Circle your answer. [1]

Line **A** Line **B** Line **C** Line **D** Line **E**



Examiner only

6. (a) Solve each of the following equations.

(i) $3y - 5 = 19$ [2]

(ii) $7(2t + 3) = 56$ [3]

(iii) $8p + 5 = 3p - 25$ [3]

(b) Factorise $w^2 - 6w$. [1]

Examiner only

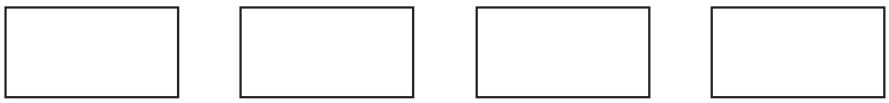
8. (a) Solve $7x = 63$. [1]

(b) Solve $27 - x = 19$. [1]

(c) Simplify $17k - 8k + 5k$. [1]

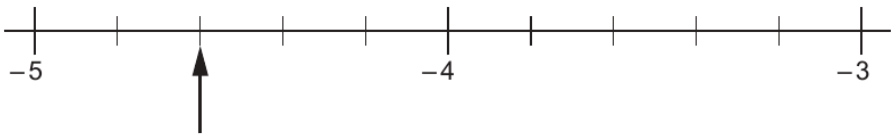
9. (a) Write these numbers in order in the boxes below.
Start with the smallest number. [1]

3 −17 12 −6



Smallest → Largest

(b) A number line is shown below.
Which number is the arrow pointing to? [1]



The number is .....

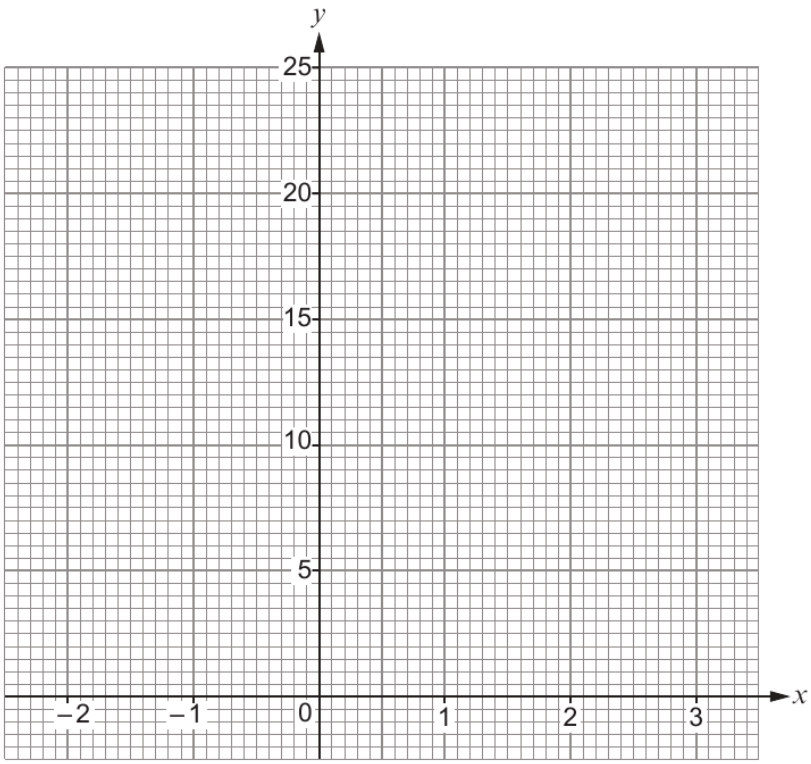
Examiner only

11. The table below shows some of the values of $y = 2x^2 + x + 3$ for values of x from –2 to 3.

x	–2	–1	0	1	2	3
$y = 2x^2 + x + 3$		4	3	6		24

(a) Complete the table by finding the values of y for x = –2 and for x = 2. [2]

(b) On the graph paper below, draw the graph of $y = 2x^2 + x + 3$ for values of x from –2 to 3. [2]



Examiner only

18. 2400 tickets were sold for a concert.
The table below shows the cost of the different types of ticket.

Ticket	Cost per ticket
SEATED	£45
STANDING	£23

The total cost of all the 2400 tickets sold was £89 520.

Let x represent the number of seated tickets sold.
Let y represent the number of standing tickets sold.

(a) Complete the following table. [1]

	Equation in terms of x and y
Total number of tickets sold	$x + y = 2400$
Total cost of tickets sold	

(b) Use an algebraic method to find the value of x and the value of y.
You must show all your working. [3]

The number of seated tickets sold, x = ...

The number of standing tickets sold, y = ...