

55 minutes

Mathematics Paper 2

Stage 7

Name

Additional materials: Ruler
Calculator
Protractor

READ THESE INSTRUCTIONS FIRST

Answer **all** questions in the spaces provided on the question paper.

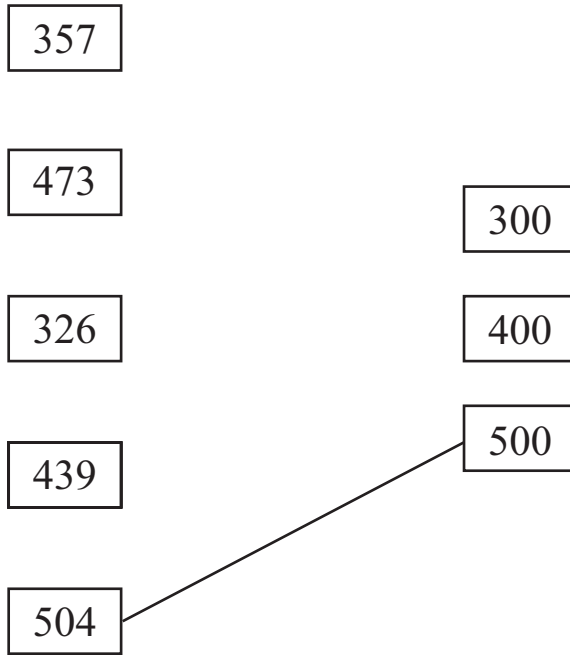
You should show all your working on the question paper.

The number of marks is given in brackets [] at the end of each question or part question.

The total number of marks for this paper is 45.

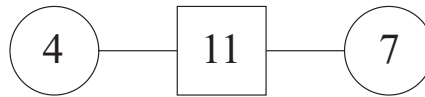
For Teacher's Use	
Page	Mark
1	
2	
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8	
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10	
11	
12	
13	
14	
15	
Total	

- 1 Draw lines to join all the numbers to their values when rounded to the nearest 100. One has been done for you.

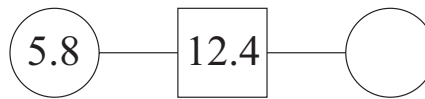


[2]

- 2 The numbers in the circles add together to make the number in the square.



Work out the number that goes in the circle.



[1]

- 3 Write these measurements in order smallest to largest.

2043 mm 57.5 cm 2.4 m 180 cm 0.6 m

..... smallest largest

[1]

- 4 Work out 35% of \$200

\$

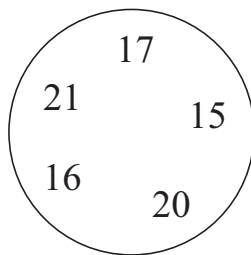
[1]

- 5 The table shows information about some quadrilaterals.
Complete the table.

Name of quadrilateral	Number of lines of symmetry	Order of rotational symmetry
Square	4	4
Rectangle		
Rhombus		
Kite		

[2]

- 6 Look at the numbers in the circle.



Use numbers from the circle to complete these statements.

(a) is a multiple of 7 and is a factor of 30 [1]

(b) is a prime number and is a square number. [1]

- 7 Keri carries out a survey.
She records the ages of 20 people.

23 36 18 37 21 45 29 30 53 42

19 61 43 52 20 47 37 74 17 64

Complete the frequency table.

Ages (years)	Frequency
1–20	
21–40	
41–60	
61–80	

[2]

- 8 What is the value of 4 in this number?

152.64

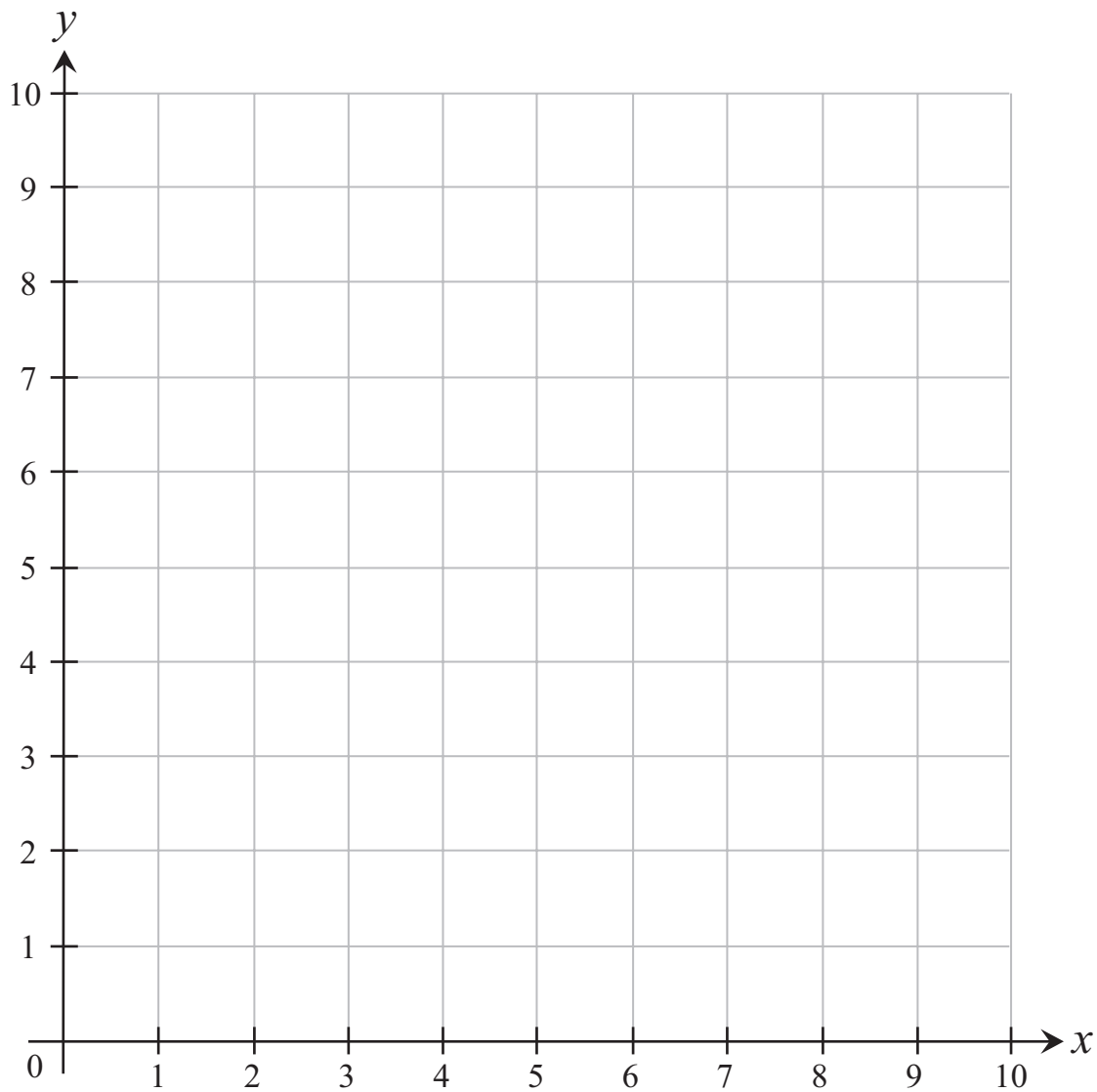
..... [1]

- 9 (a) Complete the table for $y = 2x + 1$

x	0	1	2	4
y	1		5	

[1]

- (b) Plot the points on the graph.
Draw and label the line $y = 2x + 1$

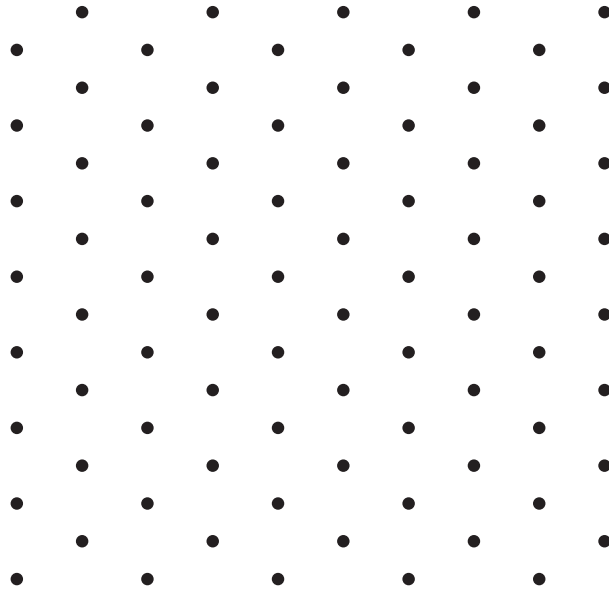


[2]

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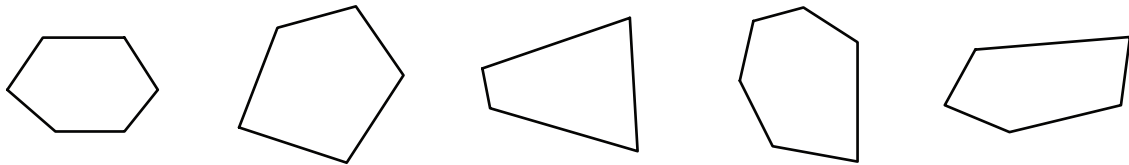
10 Here is a dotted grid.

Join dots to make a hexagon that is symmetrical but not regular.



[1]

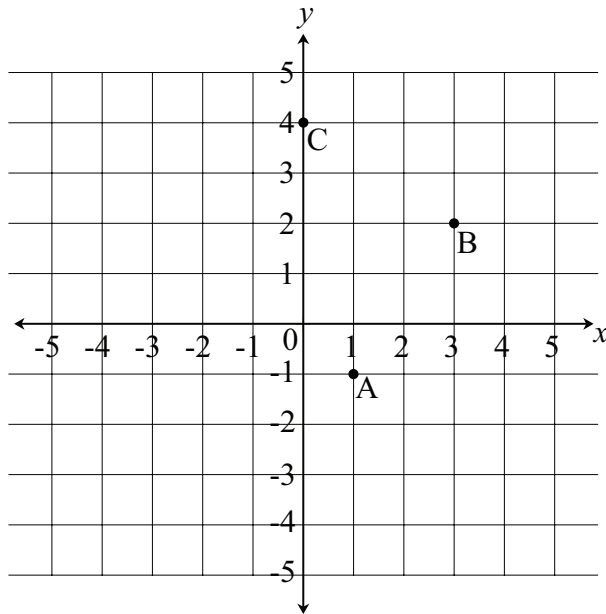
11 Tick (✓) the shapes that are pentagons.



[1]

12 A, B, C and D are the vertices of a square.
 Vertices A, B and C are plotted on this grid.

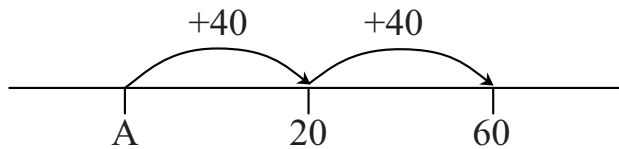
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(a) Plot vertex D on the grid. [1]

(b) Write down the coordinates of vertex D. (..... ,) [1]

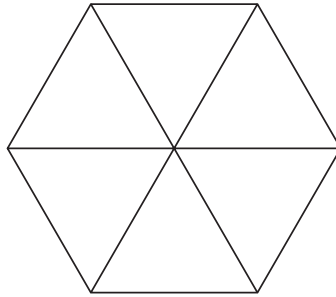
13 Here is part of a number line.



What number is at position A on the number line?

..... [1]

- 14 The face of a fair spinner is a regular hexagon.



The probability of getting an odd number is twice that of getting an even number.

Write a whole number in each section to make this correct.

[1]

- 15 Tick (✓) the expressions that have the same value when $a = 2$ and $b = 3$

$b+1$

$4a-3$

ab

$a+b$

[1]

- 16 Here are six digit cards.



Use each digit card **once** to complete these statements.

		is a square number.
--	--	----------------------------

		is a prime number.
--	--	---------------------------

		is a multiple of 18
--	--	----------------------------

[2]

17 (a) Here are the first four numbers in a sequence.

6 12 24 48

Write down the term to term rule for this sequence.

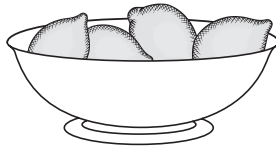
..... [1]

(b) In a different sequence the first number is 3
The term to term rule is **add 2**

Write down the 10th term.

..... [1]

18 In a shop 12 lemons cost \$3.36
Each lemon costs the same amount.



Work out the cost of 17 lemons.

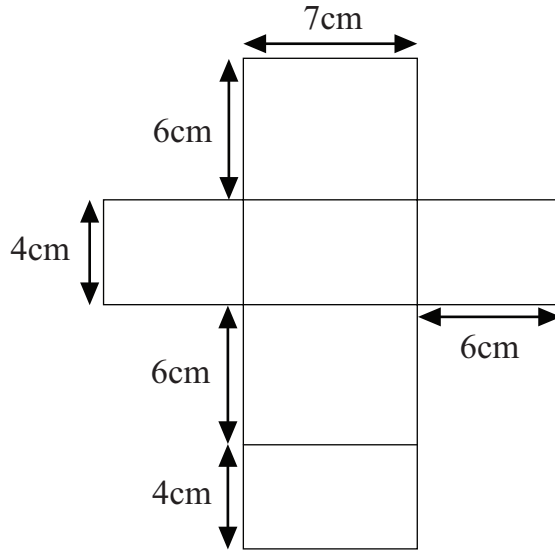
\$ [2]

19 Write a number in the box to make the calculation correct.

$$235 \div 25 = 9 \frac{\square}{5}$$

[1]

20 This is the net of a cuboid.



NOT TO SCALE

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(a) Work out the **surface area** of the cuboid.
Show your working.

..... cm² [2]

(b) Work out the **volume** of the cuboid.

..... cm³ [1]

21 Twenty skaters take part in a competition.
Their scores are shown in the table.

Score	4	5	6	7	8
Frequency	4	2	5	6	3

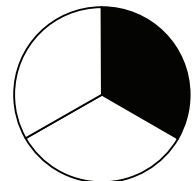
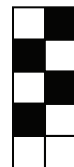
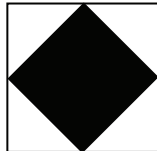
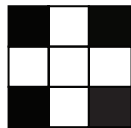
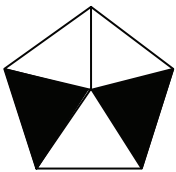
(a) What is the mode of the scores?

..... [1]

(b) Work out the mean score.

..... [2]

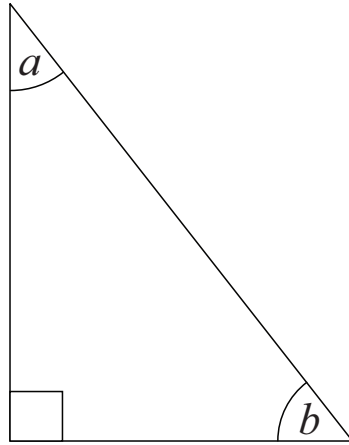
22 Tick (✓) the diagrams that have 40% shaded.



[1]

23 Here is a right angled triangle.

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Here are some angles.

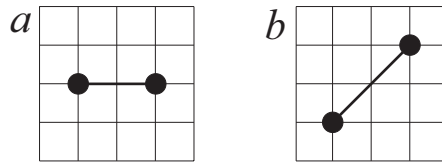
40° 55° 30° 35° 65° 70°

Tick (\checkmark) the **two** angles that can be used for a and b .

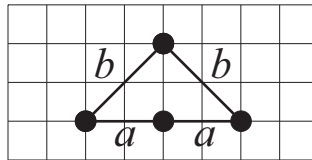
[1]

24 These lines have **lengths** a and b .

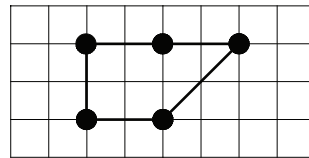
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This shape has a perimeter of $2a + 2b$.

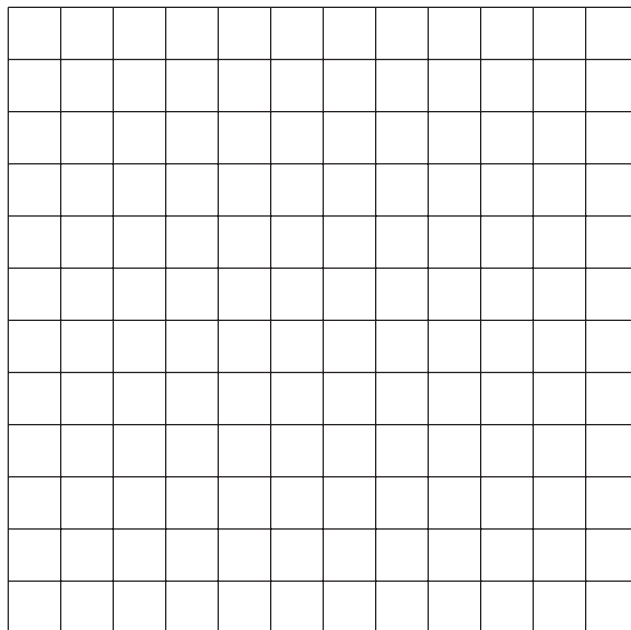


(a) Write down the perimeter of this shape.



..... [1]

(b) Draw a closed shape with perimeter $4a + 4b$.



[1]

25 (a) Write $\frac{5}{8}$ as a decimal.

..... [1]

(b) Arrange these fractions in order of size smallest to largest.

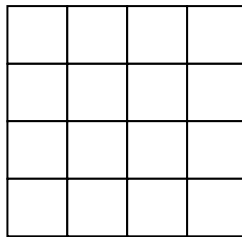
$$\frac{5}{8} \quad \frac{3}{4} \quad \frac{13}{20} \quad \frac{7}{10} \quad \frac{3}{5}$$

..... [1]
smallest largest

26 (a) Divide 20 in the ratio 3:2

..... and [1]

(b) Look at the diagram.



Shade some of the squares so that the ratio of shaded squares to unshaded squares is 3:5

[1]

- 27 A regular pentagon has sides 4cm long.
Each interior angle is 108° .

Use a ruler and protractor to draw this pentagon.

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[2]

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