

Cambridge Secondary 1 Progression Test

Question paper

Cambridge
Secondary 1

55 minutes

Mathematics Paper 2

Stage 7

Name

Additional materials: Ruler
Calculator
Tracing paper
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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6	
7	
8	
9	
10	
11	
12	
13	
14	
Total	



- 1 What is the value of 3 in this number?

728.36

..... [1]

- 2 Look at the list of numbers.

1 4 22 54 3 400 7 9

From the list, write down the numbers that are:

- (a) prime numbers

..... [1]

- (b) multiples of 4

..... [1]

- (c) factors of 27

..... [1]

- 3 Write a number in each box to make the statements true.

(a) When $x =$ then $x + 4 =$ [1]

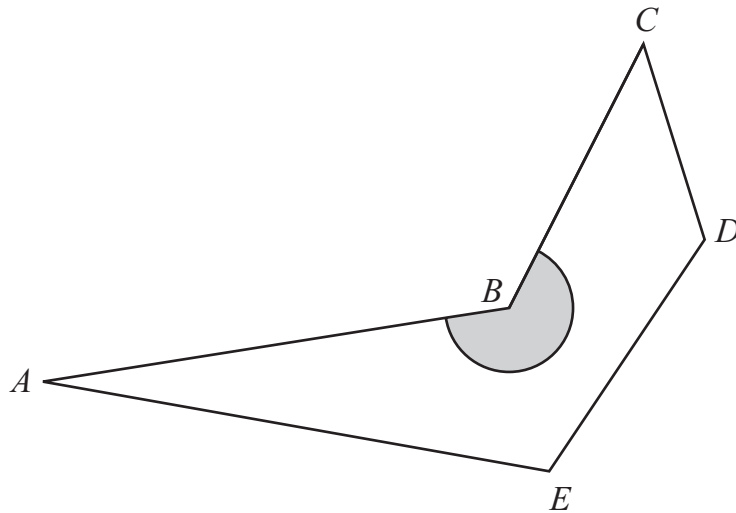
(b) When $y =$ then $3y =$ [1]

- 4 A box can hold a maximum of 35 apples.

What is the smallest number of boxes you need to hold 255 apples?
Show your working.

..... boxes [2]

- 5 The diagram shows a pentagon.



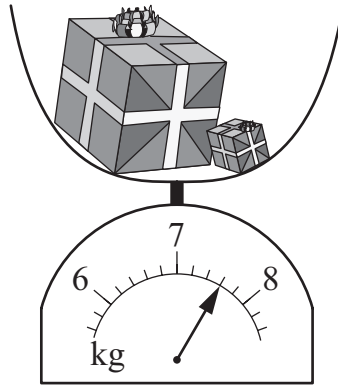
- (a) Measure accurately the size of the reflex angle ABC .

.....[°] [1]

- (b) Measure accurately the length of side AE in millimetres.

..... mm [1]

- 6 Here are some scales showing the mass of two boxes.



- (a) What is the total mass of the two boxes?
Give your answer in kilograms.

..... kg [1]

- (b) The mass of the small box is 900 g.

What is the mass of the large box?
Give your answer in kilograms.

..... kg [1]

- 7 Work out 45% of \$300

\$ [1]

- 8 The largest number of people 5 buses can carry is 265
All buses carry the same number of people.

Work out the largest number of people 3 buses can carry.

..... [1]

- 9 Mrs Green counts the number of children who walk to school.
Here are the results for 20 days.

7	14	23	35	6	27	32	11	26	24
9	18	29	21	12	38	22	19	28	30

- (a) Complete the frequency table.

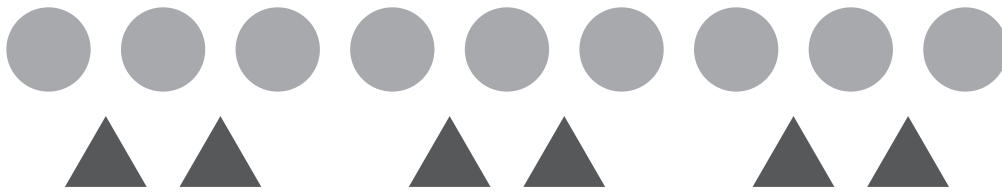
Number of children walking to school	Tally	Frequency
1 – 10		
11 – 20		
21 – 30		
31 – 40		

[2]

- (b) Write down the modal class.

..... [1]

10 Here is a diagram made from circles and triangles.



(a) Write down the ratio of circles to triangles.

..... : [1]

(b) Write the ratio 210 : 126 in its simplest form.

..... : [1]

(c) In a fruit shop the ratio of oranges to bananas is 7 : 3
Altogether there are 150 oranges and bananas.

How many bananas are there in the shop?
Show your working.

..... [2]

11 Find the lowest common multiple of 12 and 15

..... [1]

- 12 Seven children measure their pulse rate before and after exercising.

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Before exercise (beats per minute)	72	79	84	69	74	80	75
After exercise (beats per minute)	116	120	130	116	118	131	125

- (a) Complete the table by finding the median pulse rate **before** exercising.

	Median	Range
Before exercise (beats per minute)		15
After exercise (beats per minute)	120	15

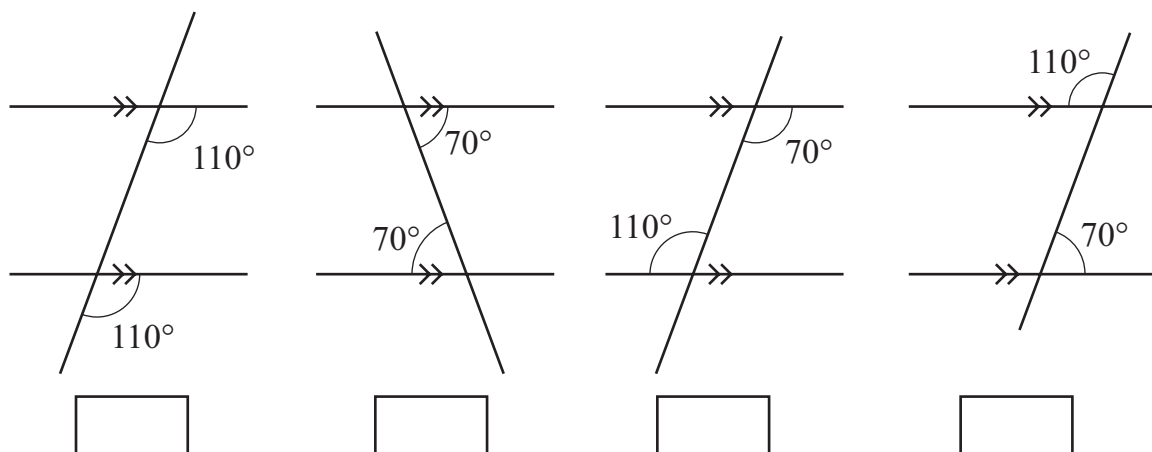
[1]

- (b) Compare the pulse rates before and after exercising.

.....
..... [1]

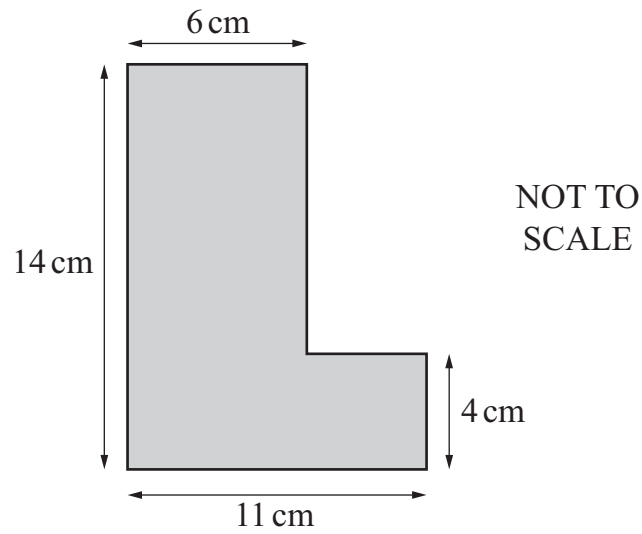
- 13 The diagrams show four sets of parallel lines and four transversals.
One of the diagrams has an angle labelled incorrectly.

Put a cross (✗) in the box of the diagram with an incorrect angle.



[1]

- 14 Here is a shape made by joining two rectangles.



- (a) Find the perimeter of the shape.

..... cm [1]

- (b) Find the area of the shape.

..... cm² [2]

- 15** Paul and Stefan both play in a tennis tournament.
Paul wins 12 out of 16 matches.

(a) Work out the percentage of matches that Paul wins.

.....% [1]

(b) Stefan wins 14 out of 20 matches.

Does Stefan win a higher percentage of his matches than Paul?

Tick (✓) a box.

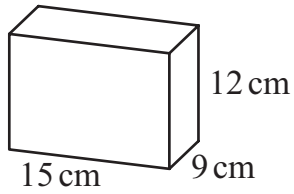
Yes ☐

No ☐

Explain your answer.

.....
..... [1]

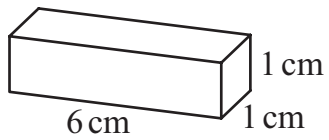
16 Draw lines to join the cube or cuboid to the correct volume.



8 cm^3

A cube with
side length 2 cm

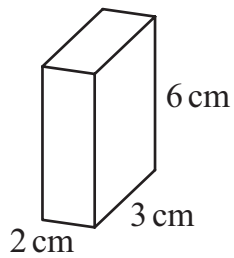
36 cm^3



1728 cm^3

A cube with
side length 12 cm

6 cm^3



1620 cm^3

[2]

17 Here are some number cards.

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

Choose five of these cards to make each of the statements correct.
Cards may be used more than once.

(a) The probability of getting a number less than 6 is 1

--	--	--	--	--

[1]

(b) It is more likely to get an even number than an odd number.

--	--	--	--	--

[1]

(c) It is impossible to get a multiple of 3

--	--	--	--	--

[1]

18 (a) Write $\frac{3}{8}$ as a decimal.

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..... [1]

(b) Decide if these statements are true or false.

The first one has been done for you.

$\frac{1}{2}$ is bigger than $\frac{1}{4}$

True

☒

False

☐

$\frac{3}{8}$ is bigger than $\frac{2}{5}$

True

☐

False

☐

$\frac{5}{8}$ is bigger than $\frac{13}{20}$

True

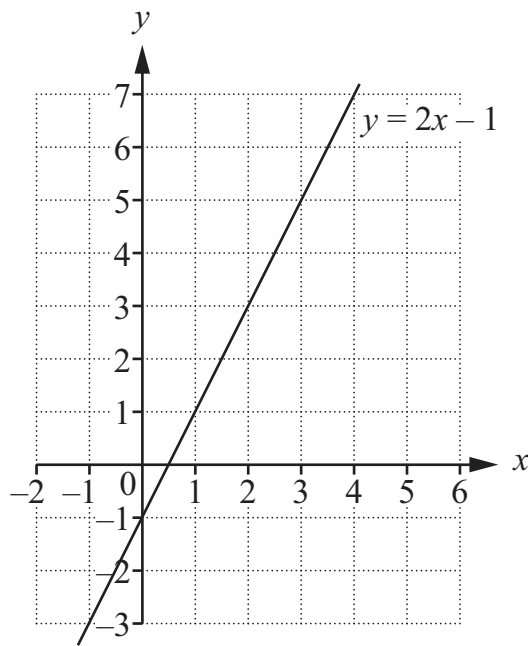
☐

False

☐

[1]

19 Here is the line $y = 2x - 1$



Points A and B are on the line $y = 2x - 1$

Complete the coordinate pairs for:

(a) point A

$A = (5, \dots\dots\dots)$ [1]

(b) point B

$B = (\dots\dots\dots, -1)$ [1]

(c) Jenna says that the point $(30, 61)$ is on the line $y = 2x - 1$

Is Jenna correct? Tick (✓) a box.

Yes ☐

No ☐

Explain how you know.

.....

..... [1]

- 20 Write down the missing numbers.
The first one is done for you.

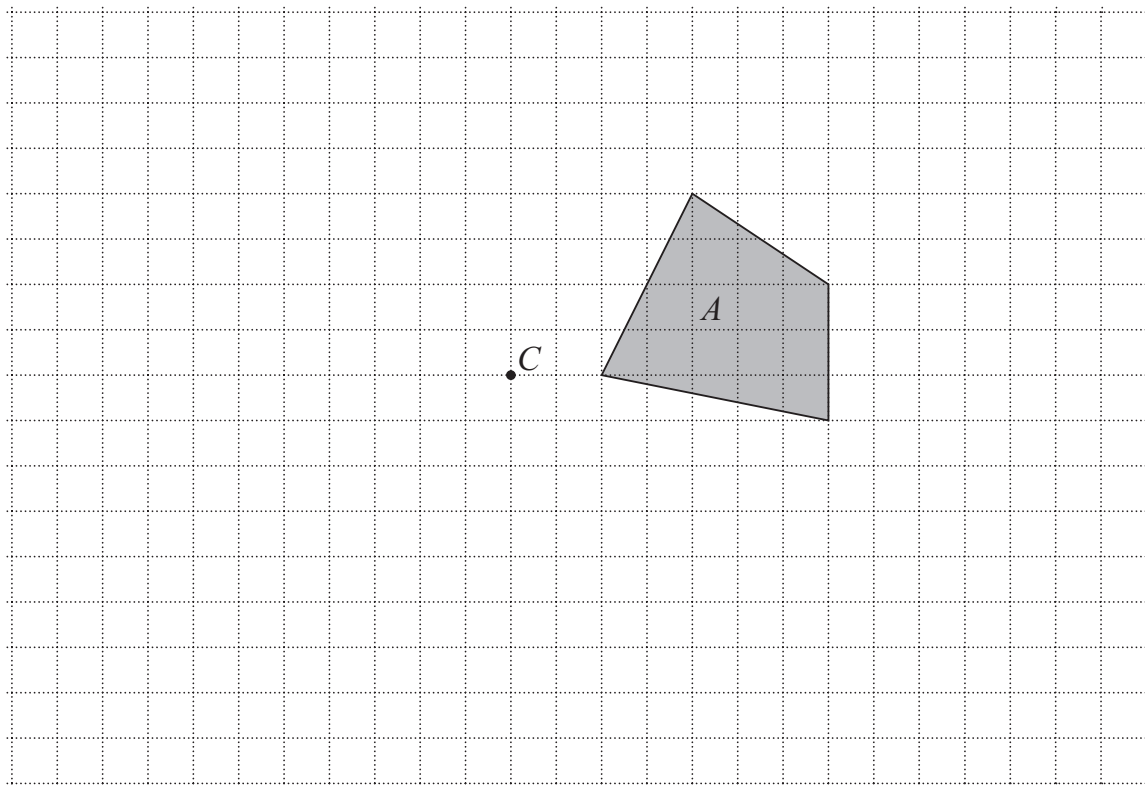
$$\frac{1}{2} \text{ of } 100 \text{ km} = \dots\dots\dots 10 \dots\dots\dots \% \text{ of } 500 \text{ km}$$

(a) $\frac{4}{5} \text{ of } \$35 = \dots\dots\dots \% \text{ of } \70 [1]

(b) $\frac{3}{10} \text{ of } \dots\dots\dots \text{g} = 25\% \text{ of } 120 \text{ g}$ [1]

(c) $\dots\dots\dots \% \text{ of } 25 \text{ cm} = \frac{1}{4} \text{ of } 200 \text{ mm}$ [1]

- 21 Shape A is drawn on a grid.



Rotate shape A 90° clockwise about point C . [2]

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