Cambridge Secondary 1 Progression Test
Question paper

Cambridge Secondary 1

55 minutes

Mathematics Paper 2

Stage 7

0615318857

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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10	
11	
12	
13	
14	
Total	

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International Examinations

For Teacher's Use

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]

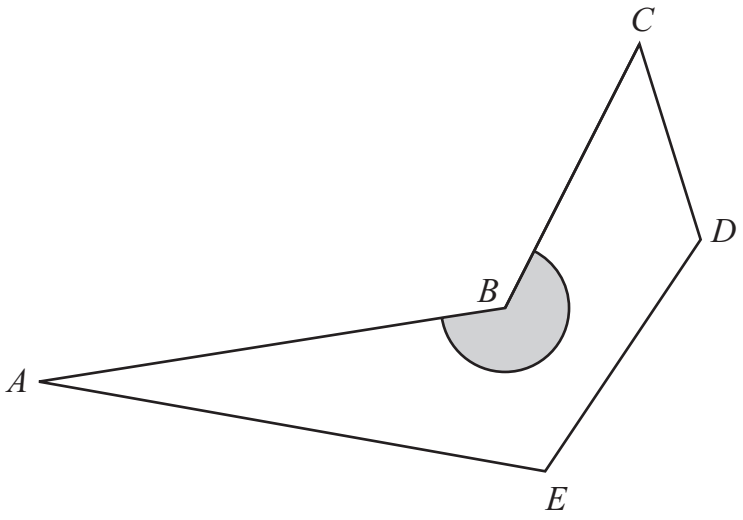
For Teacher's Use

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.

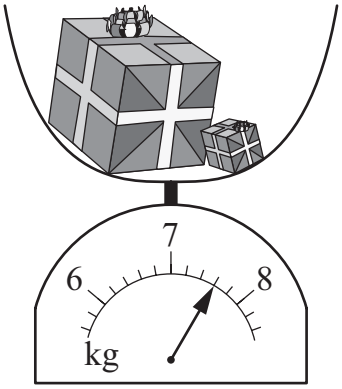
.....° [1]

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

..... mm [1]

For Teacher's Use

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]

For Teacher's Use

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]

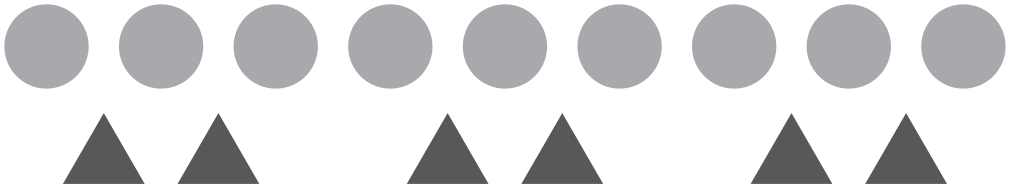
(b) Write down the modal class.

..... [1]

[Turn over

For Teacher's Use

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]

For Teacher's Use

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

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]

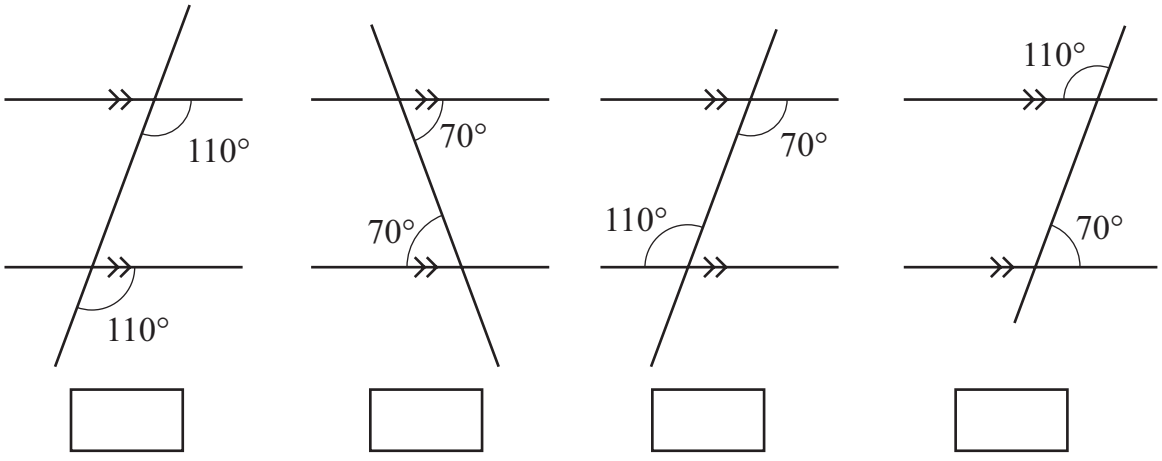
(b) Compare the pulse rates before and after exercising.

.....

..... [1]

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

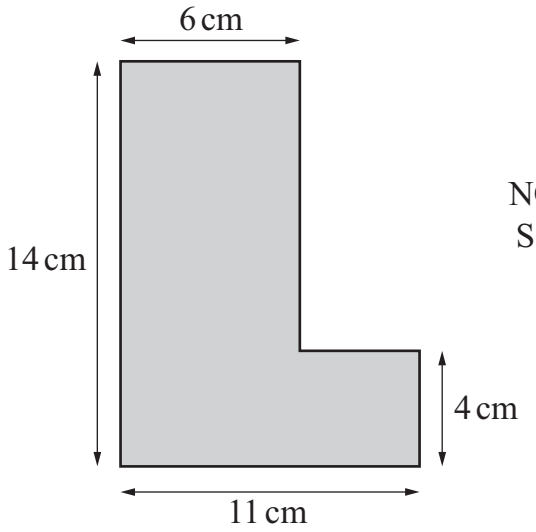
Put a cross (✕) in the box of the diagram with an incorrect angle.



[1]

For Teacher's Use

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.

.....cm^2 [2]

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

For Teacher's Use

(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 ☐

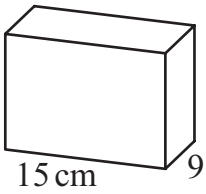
Explain your answer.

.....

.....[1]

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

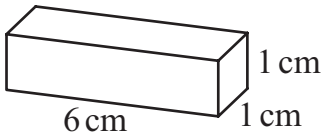
For Teacher's Use



$8\,cm^3$

A cube with side length 2 cm

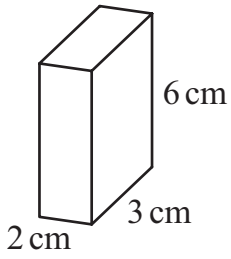
$36\,cm^3$



$1728\,cm^3$

A cube with side length 12 cm

$6\,cm^3$



$1620\,cm^3$

[2]

17 Here are some number cards.

For Teacher's Use

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]

[Turn over

For Teacher's Use

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

..... [1]

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

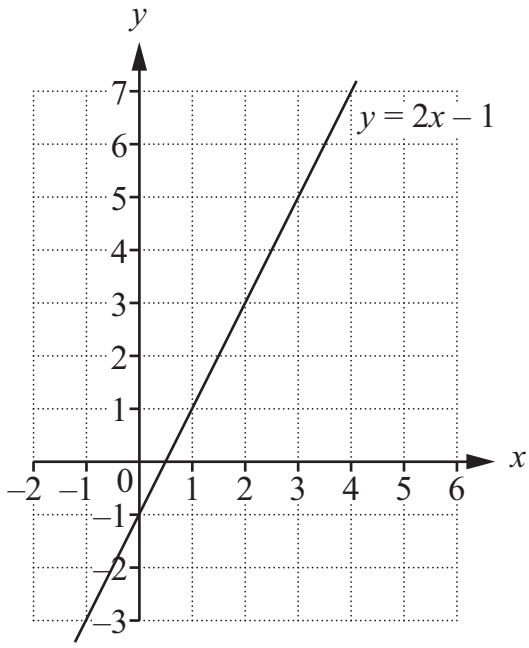
The first one has been done for you.

$\frac{1}{2}$ 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 $y = 2x - 1$

For Teacher's Use



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

Complete the coordinate pairs for:

(a) point A

$A = (5, ...)$ [1]

(b) point B

$B = (....., -1)$ [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]

For Teacher's Use

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

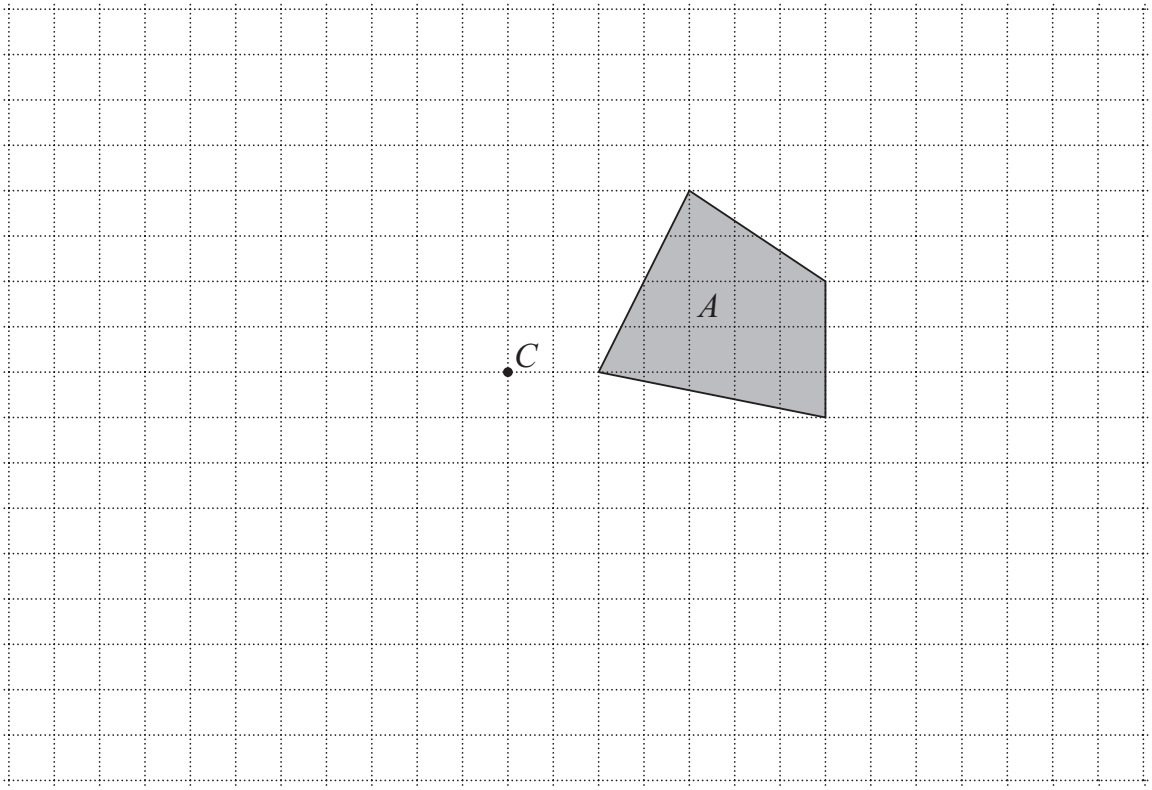
$\frac{1}{2}$ of 100 km = ...10.....% of 500 km

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

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

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

21 Shape *A* is drawn on a grid.



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