

Cambridge Secondary 1 Progression Test

Question paper

Cambridge
Secondary 1

55 minutes

Mathematics Paper 1

Stage 7

Name

Additional materials: Ruler
Tracing paper
Protractor

READ THESE INSTRUCTIONS FIRST

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

Calculators are **not** allowed.

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.

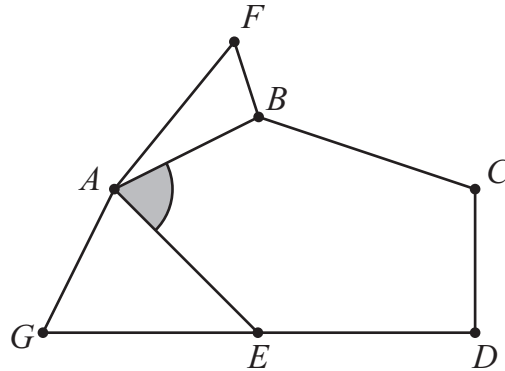
For Teacher's Use	
Page	Mark
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Total	



- 1 Round 23.649 to one decimal place.

..... [1]

- 2 Here is a diagram using the points A to G .



- (a) Put a ring around the best label for the shaded angle.

BAF GAF A EAB BAG

[1]

- (b) What is the name of the polygon $ABCDE$?

..... [1]

- 3 Here are the first five numbers in a sequence.

29 24 19 14 9

Write down the term-to-term rule for this sequence.

..... [1]

4 Calculate.

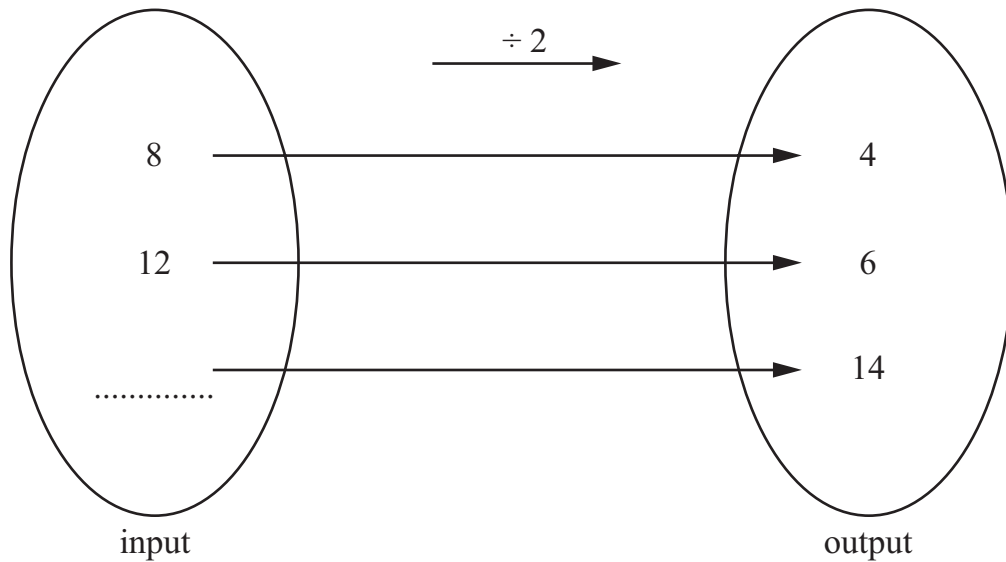
(a) $25.2 \div 4$

..... [1]

(b) 12.7×6

..... [1]

5 Here is a mapping diagram showing the function 'divide by 2'.



Complete the diagram by filling in the missing input.

[1]

6 Draw lines to join each calculation to the correct answer.

One has been done for you.

14^2		100
10^2	—	17
$\sqrt{361}$		256
16^2		196
$\sqrt{289}$		19

[1]

7 Athena uses a 'sieve' to find prime numbers.

Here are **some** of the instructions.

- Cross out the number 1
- Put a ring around the number 2 and then cross out all other multiples of 2

Put a ring around **all** the other prime numbers up to 30

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

[2]

8 Work out.

(a) 7.4×100

..... [1]

(b) $48.3 \div 1000$

..... [1]

9 Tick (✓) the correct statements.

$23.4 \text{ cm} = 234 \text{ mm}$

☐

$500 \text{ ml} = 5 \text{ l}$

☐

$1.453 \text{ m} = 1 \text{ m } 45 \text{ cm } 3 \text{ mm}$

☐

[1]

- 10** Triangle ABC has side lengths $AB = 5$ cm and $AC = 9$ cm.
Angle BAC is 51° .

Use a ruler and protractor to draw this triangle accurately.

[2]

- 11** Three numbers in each list are equivalent.
Put a ring around the number in each list that is **not** equivalent to the others.

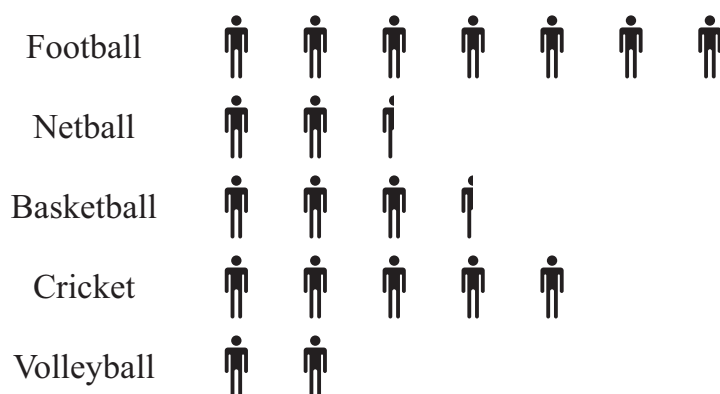
The first one has been done for you.

$\frac{1}{2}$	$\textcircled{0.7}$	50%	$\frac{2}{4}$
---------------	---------------------	-----	---------------

(a)	$\frac{1}{5}$	0.2	2%	$\frac{2}{10}$	[1]
-----	---------------	-----	----	----------------	-----

(b)	$\frac{3}{4}$	3.4	75%	$\frac{75}{100}$	[1]
-----	---------------	-----	-----	------------------	-----

- 12 Hassan asks some children in his school to name their favourite sport. He shows his results on a pictogram.



Key:  = children

- (a) 50 children choose cricket as their favourite sport.
Use this information to complete the key on the pictogram.

[1]

- (b) How many more children choose football than basketball?

..... [1]

- (c) What fraction of the children choose cricket?

..... [1]

13 Hamish writes this working:

$$\frac{2}{5} \times 3 = \frac{6}{15}$$

Is Hamish correct? Tick (✓) a box.

Yes ☐

No ☐

Explain your answer.

.....
 [1]

14 Write 0.36 as a fraction.
 Simplify the fraction to its lowest terms.

..... [2]

15 Simplify

$$3x + 2y - x + 4y$$

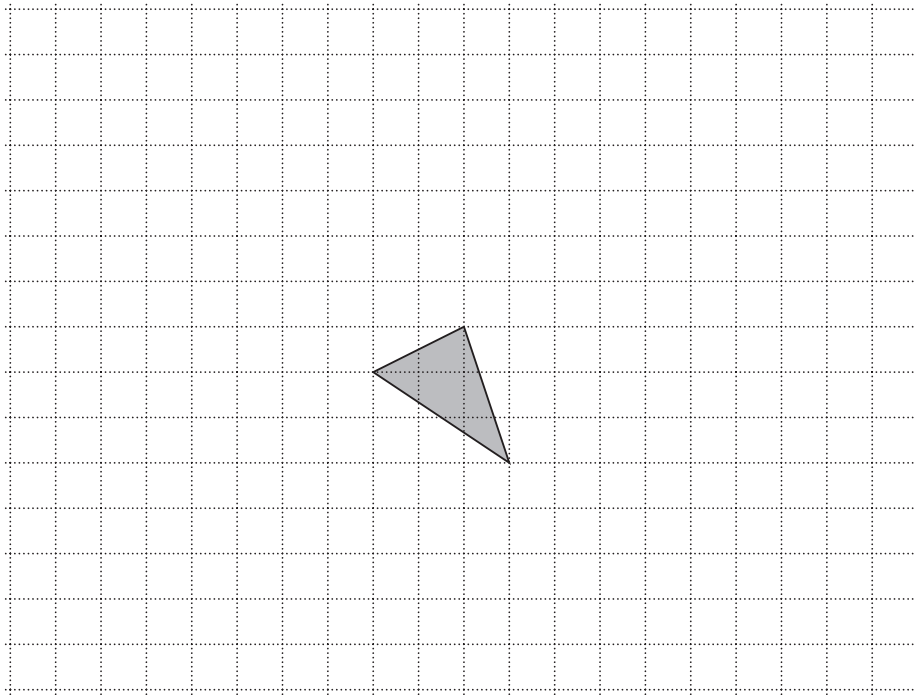
..... [1]

16 Write down the common factors of 18 and 21

..... [1]

17 Look at the triangle drawn on the grid.

Translate this triangle 3 squares left and 4 squares up.



[1]

18 The table shows some information about divisibility.

Number	Divisible by 6	Divisible by 8	Divisible by 9
24	✓	✓	✗
45			
84			
360			

Complete the table using ticks (✓) and crosses (✗).

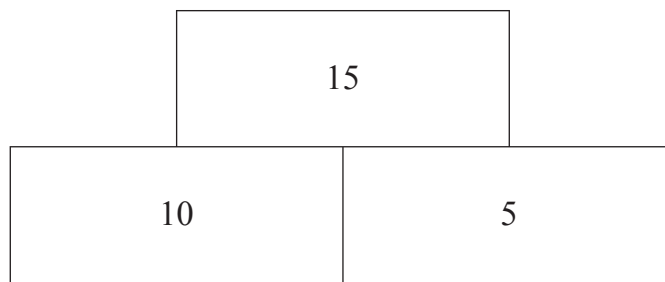
The first row has been done for you.

[2]

19 Solve $3x + 8 = 23$

$x = \dots\dots\dots$ [1]

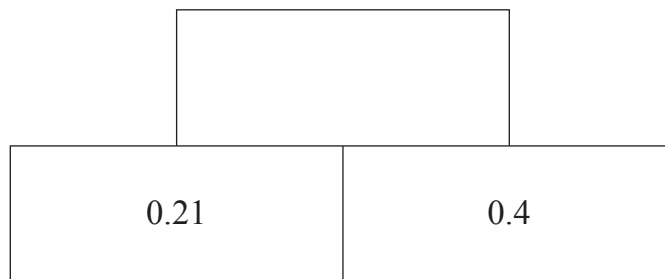
20 Here is a number pyramid.



The numbers in the bottom two boxes add together to make the number in the top box.

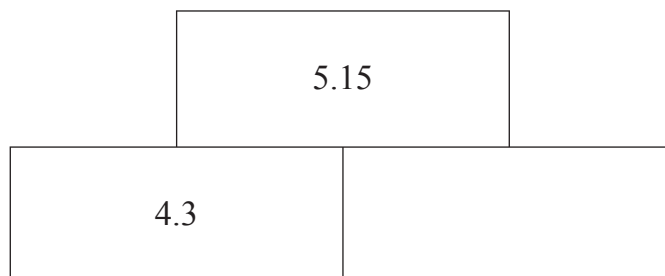
Complete these pyramids by filling in the missing boxes.

(a)



[1]

(b)



[1]

- 21 (a) Write brackets in the calculation to make it correct.

$$9 + 12 \div 3 - 1 = 15$$

[1]

- (b) Yannis works out the answer to $20 - 2 \times 3 + 5$
Here is his working.

$$\begin{aligned} & 20 - 2 \times 3 + 5 \\ = & 20 - 6 + 5 \\ = & 20 - 11 \\ = & 9 \end{aligned}$$

Is Yannis' work correct? Tick (✓) a box.

Yes ☐

No ☐

Explain your answer.

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

- 22 Look at this flight timetable.

Depart: Bogota, Colombia	Arrive: Washington DC, USA
16 20	02 10
18 50	04 35
23 40	09 10

- (a) Write the time 16 20 in 12-hour clock time.

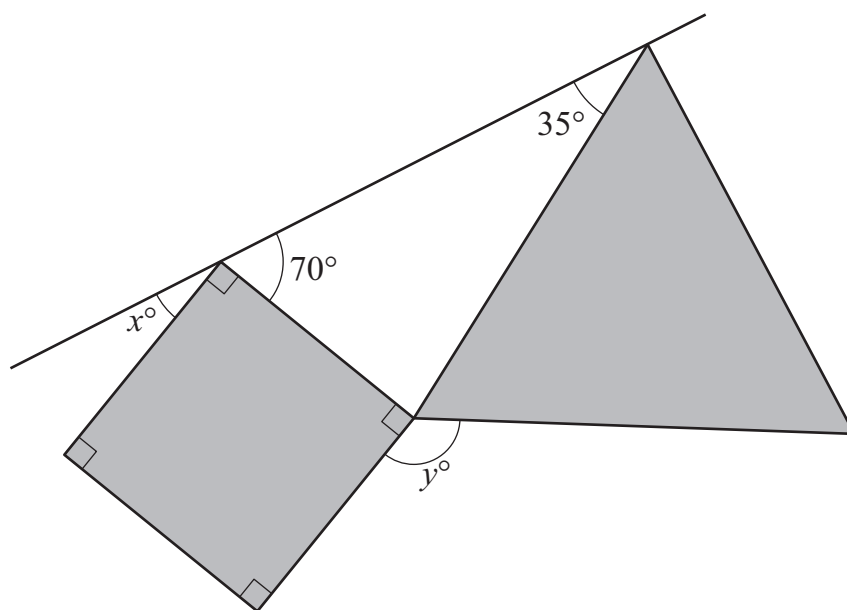
..... [1]

- (b) How long is the 18 50 flight from Bogota to Washington DC?
Give your answer in hours and minutes.

..... hours minutes [1]

- 23 The diagram shows a shaded equilateral triangle and a shaded square touching a straight line.

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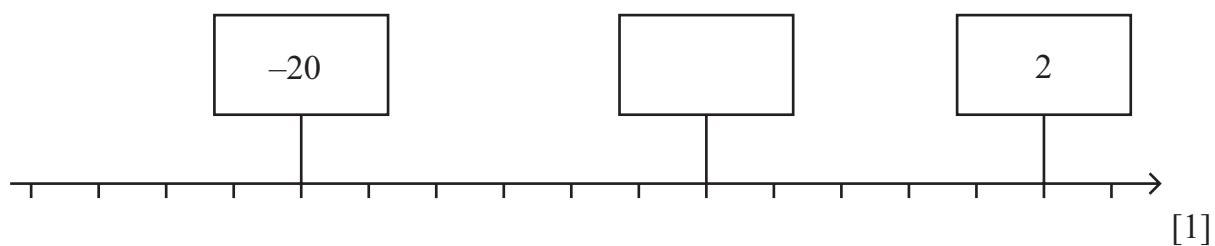
- (a) Work out angle x .

$$x = \dots\dots\dots^\circ [1]$$

- (b) Work out angle y .

$$y = \dots\dots\dots^\circ [2]$$

- 24 Write the missing number in the box on this number line.



25 Multiply out the brackets.

$$7(2x - 5)$$

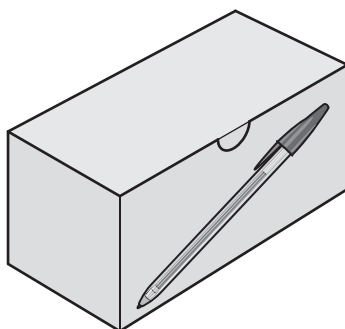
..... [1]

26 (a) Write the number in the box to make this fraction sum correct.

$$\frac{1}{3} + \frac{\boxed{}}{6} = 1$$

[1]

(b) Here is a box of pens.



Razi and Mariah each take some of the pens.

$\frac{3}{10}$ of the pens are left in the box.

Razi takes $\frac{1}{5}$ of the pens.

What fraction of the box of pens does Mariah take?

..... [1]

40kg 0.2t 5000g 320kg

[1]

8	8	8	8
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What are the other two cards?

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[2]

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