













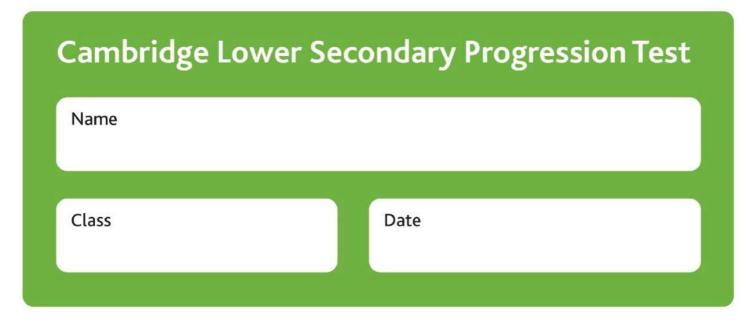
Mathematics





Stage 8

Paper 1 2024



1 hour

Additional materials: Geometrical instruments

Tracing paper (optional)

INSTRUCTIONS

- Answer all questions.
- Write your answer to each question in the space provided.
- You should show all your working on the question paper.
- You are not allowed to use a calculator.

INFORMATION

- The total mark for this paper is 50.
- The number of marks for each question or part question is shown in brackets [].

-	-	s. 200 . 000000		0.40	10000000 1000	0				6	nemalisate (#0000 #0000)	1.0
1	Draw	a ring	around	the r	part o	t a	circle	that i	s not	a	straight	line.

diameter	chord	radius	circumference	tangent

 $\lceil 1 \rceil$

2 Work out.

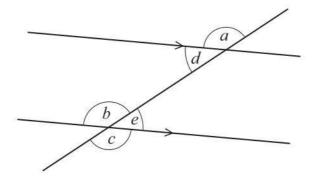
$$-6 \times -13$$



3 Find the lowest common multiple of 25 and 40. Here is a function machine.

E 4	

4 The diagram shows a pair of parallel lines with a straight line crossing them and some angles marked with letters.



Complete these sentences with the correct letters.

Angles and are alternate angles.

Angles and are corresponding angles.

Angles and are vertically opposite angles.

[2]

5	Complete	each of	these	calculations	with t	the	correct	whole	number
	Complete	cuen or	uicoc	carcarations	AA TOTT C	-110	COLLECT	WHOLE	Hullio C.

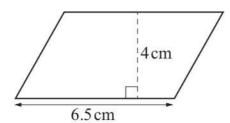
13⁰=

 $(2^3)^2 =$

 $11^{15} \div 11^{13} =$

[3]

6 The diagram shows a parallelogram.



NOT TO SCALE

Work out the area of the parallelogram.

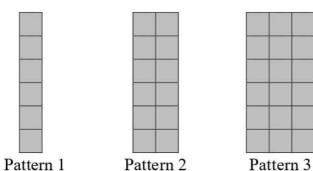
..... cm² [1]

7 Naomi draws a regular polygon with exactly 13 lines of symmetry.

Write down the order of rotational symmetry of her polygon.

[1]

8 The diagram shows the first four patterns in a sequence made with square tiles.





Pattern 4

Draw a ring around the exact number of tiles that could make a pattern in this sequence.

32 tiles 64 tiles 96 tiles 602 tiles

[1]

9 Mike and Carlos share some money in the ratio 2:5

Draw a ring around the correct statement.

Mike gets $\frac{2}{5}$ of the money.

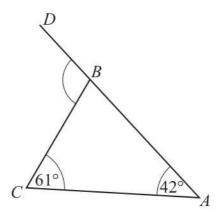
Mike gets $\frac{5}{2}$ of the money.

Mike gets $\frac{2}{7}$ of the money.

Mike gets $\frac{2}{3}$ of the money.

[1]

10 The diagram shows a triangle ABC.



NOT TO SCALE

ABD is a straight line.

Find angle CBD.

0	[1]
	[1]

11 (a) The *n*th term of a sequence is $\frac{n}{2} + 5$

Work out the 6th term of the sequence.

[1]
 -

(b) Here are the first five terms of a different sequence.

2, 8, 14, 20, 26

Find the *n*th term of this sequence.



12	Here are the names of son	ne quadrilaterals.		
	squares p	parallelograms	rhombuses	kites
	Choose the correct word f	rom the list to comp	lete this statement.	
	All re	ctangles are		. [1]
13	(a) Oliver writes this calc	ulation.		
		$1+2\times5^2=7$	75	
	Tick (✓) to show if O	liver is correct or no	ot correct.	
	Oliver is correct Explain your answer.	Oliver is	not correct	
				[1]
	(b) Work out. $\sqrt{3^2 \times 2^3 + 28}$			
				[2]

14 Draw a bearing of 285° from point X.



[1]

15 Work out.

$$5\frac{7}{12} - 3\frac{3}{4}$$

Give your answer as a mixed number in its simplest form.

[3]

16	M is the point $(1, 3)$.
	M is the midpoint of the line AB .

Complete the coordinates for A and B.

$$A = ($$
 -2 , ______)
 $B = ($ _____, 7)
[2]

17 Here is a mathematical statement.

56 kilometres + 4.3 miles = x miles

Work out the value of x.

$$x =$$
 [2]

18	3	
10		Simplify.

5a-2a+a

$$\frac{3b}{10} + \frac{4b}{10}$$

[2]

19 Jamila has a 6-digit number.

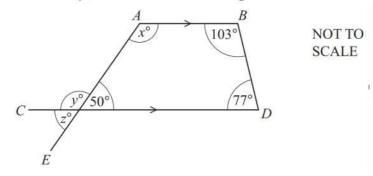
Two of the digits in her number are hidden.

Tick (✓) to show if each of Jamila's statements must be true, could be true or must be false.

	Must be true	Could be true	Must be false
My number is divisible by 4			
My number is divisible by 5			
My number is divisible by 8			
My number is divisible by 9			

[2]

20 AB and CD are parallel lines. AE is a straight line.



(a) Find t	he va	lue	of	х.
------------	-------	-----	----	----

$$x = \dots$$

(b) Find the value of y.

(c) Find the value of z.

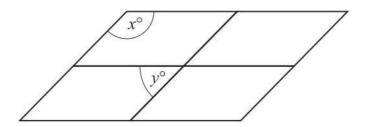
$$z = \dots$$

21 Eva says, 'The highest common factor of 36 and 60 is 6'
Show that she is **not** correct.

[1]

[3]

22 The diagram shows a tessellation of four parallelograms with no lines of symmetry.



Write down a possible pair of values for x and y.

<i>x</i> =	 	 	
<i>y</i> =	 	 	
			Γ1 1

(a) In a sale, prices are reduced by 20%. Find the sale price of a shirt as a percentage of the original price.

0.4	F + 7
0/2	111
	[1]

(b) Calculate 43% of \$1500

******************	d'	F17
		1.1.

24 Complete each box with the correct power.

$$48 \times 150 = 2 \qquad \times \qquad 3 \qquad \times \qquad 5$$

[2]

These are	the length	ns, in centi	imetr	es, for a	sample	of 10 fre	eshwatei	fish.		
6.9	7.6	7.8	6	5.7	6.5	5.1	7.2	7.1	7.8	
(a) Complete the stem-and-leaf diagram for this information.										
	Kev:									
					•••••					[3]
		informati	on a	bout the	lengths	of 10 sa	ltwater	fish in a	different	
				Saltwat	er					
	N	Iedian		8.4 cm	í					
	R	lange		5.8 cm	Ĺ					
and the Give y You m	e distribut our comp ust includ	ion of the arisons in de the stat	leng cont istics	ths of the ext. s you use	e saltwa	ter fish.				

					•••••					[4]
	(a) Comp (b) The tal sample Write tal and the Give y You m 1	6.9 7.6 (a) Complete the state of the state	6.9 7.6 7.8 (a) Complete the stem-and-leading to the stem sample. Key: Median Range Write two comparisons be and the distribution of the Give your comparisons in You must include the state 1	Key: Key: Median Range Write two comparisons between and the distribution of the leng Give your comparisons in cont You must include the statistics.	6.9 7.6 7.8 6 5.7 (a) Complete the stem-and-leaf diagram for the state of the sample. Key: Saltwat Median 8.4 cm Range 5.8 cm	6.9 7.6 7.8 6 5.7 6.5 (a) Complete the stem-and-leaf diagram for this in Key: Key: Key: Saltwater Median Range 5.8 cm Write two comparisons between the distributio and the distribution of the lengths of the saltwa Give your comparisons in context. You must include the statistics you use.	Key: Key: Saltwater Median Range 5.8 cm Write two comparisons between the distribution of the and the distribution of the lengths of the saltwater fish. Give your comparisons in context. You must include the statistics you use. 1 2	(a) Complete the stem-and-leaf diagram for this information. Key: Key: Saltwater Median 8.4 cm Range 5.8 cm Write two comparisons between the distribution of the lengths and the distribution of the lengths of the saltwater fish. Give your comparisons in context. You must include the statistics you use.	(a) Complete the stem-and-leaf diagram for this information. Key: Key: Saltwater Median 8.4 cm Range 5.8 cm Write two comparisons between the distribution of the lengths of the frand the distribution of the lengths of the saltwater fish. Give your comparisons in context. You must include the statistics you use.	(a) Complete the stem-and-leaf diagram for this information. Key: (b) The table shows information about the lengths of 10 saltwater fish in a different sample. Saltwater Median 8.4 cm Range 5.8 cm Write two comparisons between the distribution of the lengths of the freshwater f and the distribution of the lengths of the saltwater fish. Give your comparisons in context. You must include the statistics you use. 1

26 Square ABCD has a side length of 5 units.



ABCD is drawn on a grid so that C is at (16, 11). ABCD is then translated 4 left and 2 down.

Find the coordinates of vertices A and B after this translation.

A = (,)
B = (,)
	[2]

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