

EXAMINATIONS COUNCIL OF ESWATINI Eswatini General Certificate of Secondary Education

CANDIDATE NAME			
CENTRE NUMBER	CANDIDATE NUMBER		
MATHEMATICS Paper 1 Short-Answer Questions (Core) Candidates answer on the Question Paper.	Oct	ober/Nove	

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name in the spaces provided. Write in dark blue or black pen in the spaces provided on the Question paper. You may use an HB pencil for any diagrams or graphs. Do **not** use staples, paper clips, highlighters, glue or correction fluid.

Geometrical instruments Tracing paper (optional)

Answer all questions.

Additional Materials:

If working is needed for any question it must be shown below that question. The number of marks is given in brackets [] at the end of each question or part question.

Electronic calculators should be used.

If the degree of accuracy is not specified in the question, and if the answer is not exact, give the answer to three significant figures. Give answers in degrees to one decimal place.

For π , use either your calculator value or 3.142. The total of the marks for this paper is 60.

For Examiner's Use				
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			2
1	On	a particular day, the temperature in Lavum	isa is 12°C.
	On	the same day, the temperature in Mbabane	is −1 °C.
	(a)	Find the temperature difference between	Mbabane and Lavumisa.
			<i>Answer (a)</i> °C [1]
	(b)	Pigg's Peak is 2°C colder than Mbabane.	
	()	Find the temperature in Pigg's Peak.	
			<i>Answer (b)</i> °C [1]
	(a)	The temperature in Machene increases by	
	(c)	The temperature in Mbabane increases by	/ / C.
		Find the new temperature.	
			<i>Answer (c)</i> °C [1]
2	Arra	ange the numbers in order size starting with	h the largest.
		$-0.77 \frac{7}{9} -$	9 0 77.7%

largest

3 Without using a calculator, work out $2\frac{3}{4} \div \frac{4}{5}$. Show all your working.

Give your answer as a mixed number.

4 (a) Express 0.002 45 in standard form

Answer (a) [1]

(b) Work out.

$$\frac{1.23 \times 10^8 - 7 \times 10^3}{2 \times 10^{-4}}.$$

Give your answer in standard form.

Answer (b)[1]

5	Tanele invests E75 500 at a rate of 6% simple interest per annum.		
Calculate the interest she will receive after 30 months.			
		Answer E	[3]
6	(a)	Write down the mathematical name of a polygon that has seven sides.	
		Answer (a)	[1]
	(b)	State the mathematical name of a triangle with exactly two equal sides.	
		Answer (b)	[1]
	(c)	Write down the mathematical name of a regular quadrilateral.	
	(0)	write down the mathematical name of a regular quadritateral.	
			F17
		Answer (c)	[1]

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7 In this question use a ruler and a pair of compasses only.

Construct a triangle with sides of lengths 4 cm, 6 cm and 8 cm.

[3]

8 (a)	Factorise
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$$14a - 21$$

Answer (a)[1]

(b) Remove brackets and simplify.

$$3(x-2) + 4(1+x)$$

Answer (b) [2]

9 Solve the inequality.

$$3(5-2y) < 4$$

10 Work out.

$$\begin{pmatrix} 1 \\ -2 \end{pmatrix} + 3 \begin{pmatrix} 2 \\ -1 \end{pmatrix}$$

Answer [2]

11 The ratio of Mandla's height to Siphiwe's height is 6 : 7. Siphiwe is 1.75 m tall.

Calculate Mandla's height.

Answer m [2]

- 12 You are given the function f(x) = 5x 3.
 - (a) Evaluate f(x) when $x = \frac{2}{3}$.

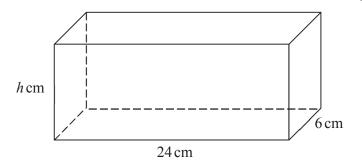
Answer (a)
$$f(x) =$$
 [2]

(b) Find $f^{-1}(x)$

Answer (b)
$$f^{-1}(x) = ...$$
 [2]

13 The diagram shows a cuboid.

NOT TO SCALE

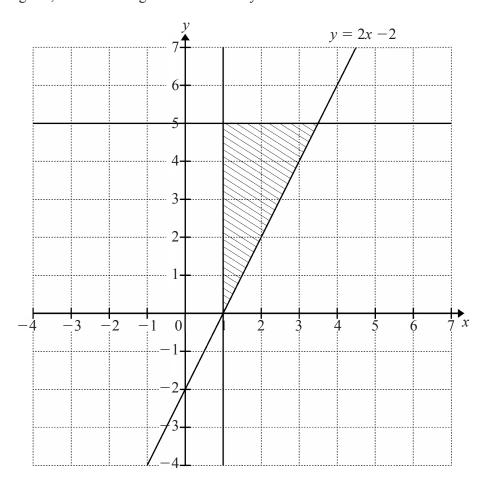


The volume of the cuboid is $1296 \,\mathrm{cm}^3$. The length of the cuboid is $24 \,\mathrm{cm}$. The width of the cuboid is $6 \,\mathrm{cm}$. The height of the cuboid is $h \,\mathrm{cm}$.

Calculate the value of *h*.

Answer h =	=	cm	[2]
Answer n -		CIII	141

14 In the diagram, the shaded region is enclosed by three lines.



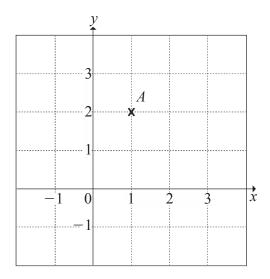
Write down three inequalities satisfied by the shaded region.

Answer

.....

.....[3]

15 The diagram shows point A.



(a) Write down the coordinates of point A.

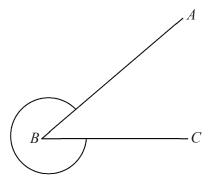
[1]

(b) On the diagram, plot the point C with coordinates (3, -1).

16	The diagram shows a regular polygon.			
Calculate the size of an interior angle of a regular pentagon.				
		<i>Answer</i> ° [2]		
17	(a)	A bird on a tree looks down and sees a rat on the ground.		
		The angle of depression of the rat from the bird is 63°.		
		Write down the angle of elevation of the bird from the rat.		
		<i>Answer (a)</i> ° [1]		
	(b)	The bearing of town P from town Q is 320° .		
		Calculate the bearing of town Q from town P .		
		<i>Answer (b)</i> ° [2]		

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18 Measure and write down the size of reflex angle \widehat{ABC} .

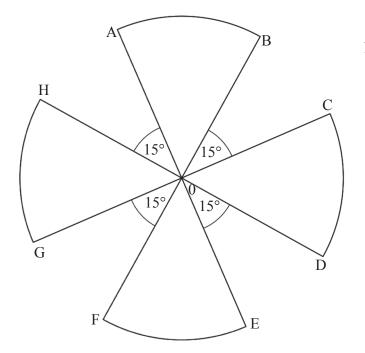


Answer Reflex angle $\widehat{ABC} = \dots \circ [2]$

19 The figure shows the design of a logo of a school food company. The sectors *OAB*, *OCD*, *OEF* and *OGH* are **identical**.

Each sector has a radius 5 cm.

The angles in between the sectors are all 15°.



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- (a) Calculate
 - (i) the sector angle AOB.

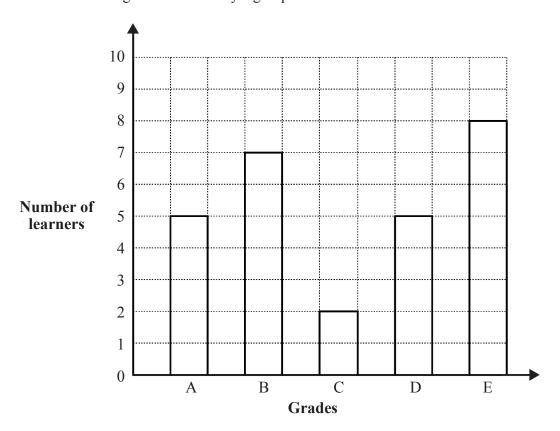
(ii) the total area covered by the four sectors.

(b) State the order of rotational symmetry of the logo.

Answer (b) order of rotational symmetry[1]

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20 The bar chart shows grades obtained by a group of learners.



(a) Find the total number of learners that were in the group.

Answer (a) learners [1]

(b) Find the number of learners that got lower than grade C.

Answer (b) learners [1]

(c) Write down the modal grade.

Answer (c)[1]

21	(a)	Simp	olify
'	,		JIII Y

$$12x^3y \div 36xy^2$$

Answer (a) [2]

(b) Express as a single fraction in its simplest form.

$$\frac{x}{2} - \frac{x-1}{5}$$

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