

## EXAMINATIONS COUNCIL OF LESOTHO Lesotho General Certificate of Secondary Education

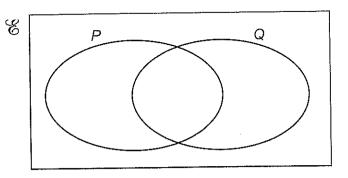
CANDIDATE NAME					A-14									
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MATHEMATIC Paper 1 (Core)	_								0	ctob	er/No	ovem M	ber 2	our
Candidates and	swer on	the Ques	tion Paper.											
Additional Mate	erials:		rical Instru paper (opt											
READ THES	E INSTI	RUCTIO	NS FIRST	•										
Write your na	me, cer	ntre numi	ber and ca	andi	date number	in th	e rele	evant s	spac	es p	rovid	led a	it the	top of
this page.														
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Do not use st	aples, p	aper clip	s, glue or	cor	rection fluid.									
Answer <b>all</b> qu	uestions	i <u>.</u>												
ELECTRONI	C CALC	ULATO	RS MUST	NO	T BE USED	IN TI	HIS P	APEF	₹.					
If working is r	needed	for any c	luestion, if	t mu	ıst be shown	belo	w tha	t ques	stion.	•				
The number	of marks	s is giver	ı in bracke	ets [	] at the end	of ea	ach q	uestio	n or	part	ques	stion		

This document consists of 11 printed pages and 1 blank page.



1	Eva	luate.	•
	(a)	$9 + 2 \times 8 \div 4 - 3$	
	-	·	
	(b)	$3\frac{1}{2}-2\frac{1}{3}$	[1]
	(13)	¥2 = 53	
			[2]
2	Ехр	ress 108 as a product of its prime factors.	
		·	[2]
3	Writ	to.	
J	(a)	21054 correct to 3 significant figures,	
	(a)	21054 correct to a significant figures,	
			[1]
	(b)	0.075 as a fraction in its simplest form.	

4 Shade the region represented by  $P' \cap Q$  in the following Venn diagram.



[1]

5 A farmer has 168 eggs in her basket. The eggs are transferred into trays.

A tray of eggs holds 30 eggs.

Find the number of complete trays of eggs for the farmer.

.....[2]

$$\mathbf{6} \quad \mathbf{A} = \begin{pmatrix} -1 & 2 \\ 5 & 1 \end{pmatrix}$$

$$\mathbf{B} = \begin{pmatrix} 3 & 1 \\ 0 & 7 \end{pmatrix}$$

Work out.

A + B

. [2]

7 Work out and give your answer in standard form.

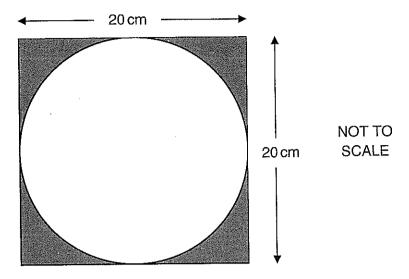
$$3.6 \times 10^4 \div 1.2 \times 10^7$$

.. [2

			4	
8	Fact	orise completely.		
	(a)	$4ab - 20a^2$		
				-43
				[1]
	(b)	4ab + 2bc - 6a - 3c		
			,	
				[2]
		1.		[2]
9	Solv			
	(a)	x - 7 = 8		
				$x = \dots [1]$
	(b)	$x^2 - 6x + 5 = 0$		

$x = \dots$ or $x = \dots$ [3]
--------------------------------

The diagram shows a circle inside a square.
The circle touches all four sides of the square.
The side of the square is 20 cm.

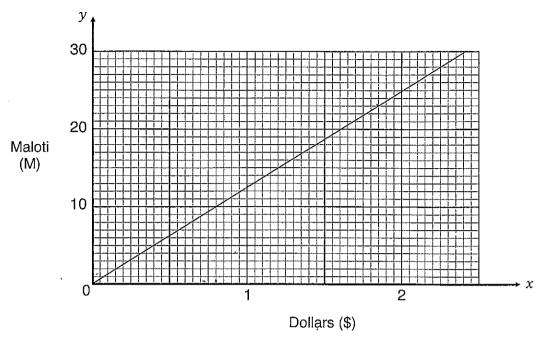


Use  $\pi$  as 3.142.

Calculate the shaded area.

.....cm² [3]

11 The diagram shows a graph used to convert between dollars (\$) and Maloti (M) on a particular day.



(a) Use the graph to change M2500 into dollars.

\$																															[2	1
Y	•	٠	٠	•	٠	٠	•	•	•	٠	٠	•	٠	٠	٠	٠	٠	•	•	•	•	٠	•	•	•	۰	•	٠	۰	٠	ייו	1

(b) On the same day Suping changes \$150 into Maloti.

Use the graph to calculate the amount he receives in Maloti.

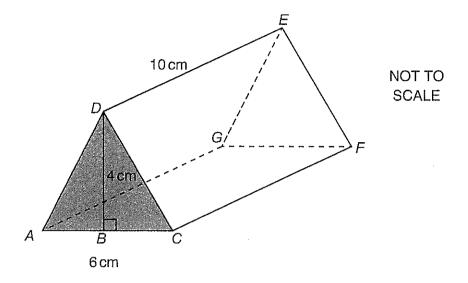
Μ.					•											[2	2	
																	-	

12 The mass of a baby decreased from 7.5 kg to 6.3 kg.

Calculate the percentage decrease in baby's mass.

.....% [2]

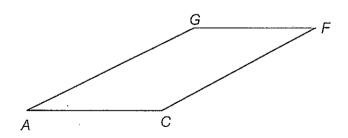
13 The diagram shows a triangular prism. AC = 6 cm, BD = 4 cm and DE = 10 cm.



(a) Calculate the volume of the prism.



(b) Complete a labelled sketch of the net for the prism.



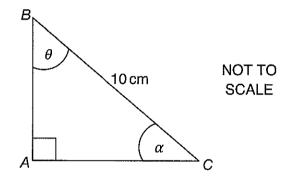
14	The	brobability of choosing a black ball is $\frac{5}{12}$ and the probability of choosing is chosen at random from the bag.	oosing a yellow ball is $\frac{7}{18}$ .
	(a)	Show that the probability of choosing a red ball is $\frac{7}{36}$ .	
	<b>(b)</b>	Calculate the probability of choosing a red ball or a yellow ball.	
	***************************************		[2]
15	Pule	leaves home at 6.17 a.m. to school and arrives after 48 minutes	3.
	Find	the time at which he arrives at school.	[2]
16	f(x)	=2x+3	
	Find (a)	f(0),	
			f(0) =[1]
	(b)	p when $f(p) = 11$ .	
			[2

17 The length, l, of a desk measures 48.4 cm correct to the nearest millimetre.

Find the lower bound and the upper bound for the length.

$\ldots \leq l < \ldots \leq l$
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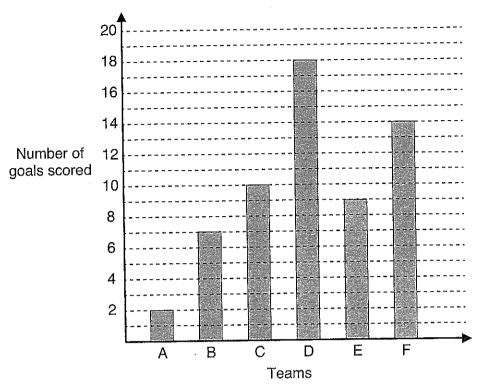
18 The diagram shows triangle *ABC* with *BC* = 10 cm. Angles  $\theta$  and  $\alpha$  are marked in the triangle.



Find the value of  $\cos \alpha$  if  $\sin \theta = \frac{2}{5}$ .

.....[2]

19 The bar chart shows the number of goals scored by each team in a tournament.



(a) Find the team which scored the least number of goals.

																				[1]	
•	•	•	•	•	-	-	-	-	_	•	•										٠.

(b) Calculate the mean score.

																														[	3	]
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	---	---	---

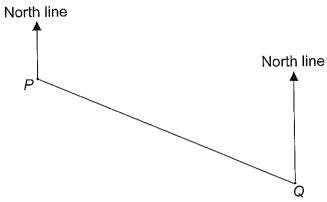
20 Solve the simultaneous equations.

$$\frac{3}{4}x = 12y$$

$$x - 15y = 1$$

 $x = \dots$ 

21 The diagram shows points P and Q with the north lines.

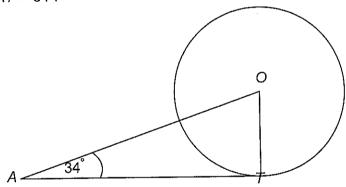


Measure and write the bearing of P from Q.

.....° [2]

**22** The diagram shows a circle with centre O. *AT* is a tangent to the circle at *T*.

Angle  $OAT = 34^{\circ}$ .



NOT TO SCALE

Calculate angle AOT.

Angle *AOT* = .....° [2]

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