#### SMZ

# ZANZIBAR EXAMINATION COUNCIL

# FORM THREE ENTRANCE EXAMINATION 2014

### **MATHEMATICS**

TIME: 3:00 HOL	urs
----------------	-----

## INSTRUCTIONS TO CANDIDATES

- 1. This paper consists of TWO sections A and B.
- 2. Answer ALL questions in Section A and any FOUR questions in section B.
- 3. Each question in Section A carries 7 marks while each question in Section B carries 11 marks.
- 4. ALL WORKING must be clearly shown in both sections.
- 5. Calculators and mobile phones are not allowed in the examination room.
- 6. Write your examination number on every page in the spaces provided.
- 7. You are required to circle each question you have attempted in the Question number "column".

	FOR EXAMNA	ER'S USE ONLY
QUESTIONS NUMBER	MARKS	SIGNATURE
1.		
2.		
3.		
4.		
5.		
6.		
7.		
9.		
10.		
11.		
12.		
13.		
14.		

THIS PAPER CONSISTS OF 20 PRINTED PAGES

Hence find the greatest common factor (GCF) of 16 and 24.  (ii)  (ii)  Round off each of the numbers 8.7, 69.5, 210.11 and 146.8 nearest unit.  (iii)  By putting the rounded numbers in b(i) above, approximate value of the numerical expression:  \[ \frac{146.8 \times 210.11}{69.5 \times 8.7} \]			Candidare	
Hence find the greatest common factor (GCF) of 16 and 24.  (ii) Round off each of the numbers 8.7, 69.5, 210.11 and 146.8 nearest unit.  ii) By putting the rounded numbers in b(i) above, approximate value of the numerical expression:  \[ \frac{146.8 \times 210.11}{69.5 \times 8.7} \]		SECTION A	(60 MARKS)	
Hence find the greatest common factor (GCF) of 16 and 24.  (ii) Round off each of the numbers 8.7, 69.5, 210.11 and 146.8 nearest unit.  (iii) By putting the rounded numbers in b(i) above, approximate value of the numerical expression:  146.8 × 210.11 69.5 × 8.7		e de of		
Hence find the greatest common factor (GCF) of 16 and 24.  (ii) Round off each of the numbers 8.7, 69.5, 210.11 and 146.8 nearest unit.  (iii) By putting the rounded numbers in b(i) above, approximate value of the numerical expression:  146.8 × 210.11 69.5 × 8.7	List	down all factors of		
Hence find the greatest common factor (GCF) of 16 and 24.  (i) Round off each of the numbers 8.7, 69.5, 210.11 and 146.8 nearest unit.  (ii) By putting the rounded numbers in b(i) above, approximate value of the numerical expression:  146.8 x 210.11 69.5 x 8.7		16		
Hence find the greatest common factor (GCF) of 16 and 24.  (i) Round off each of the numbers 8.7, 69.5, 210.11 and 146.8 nearest unit.  (ii) By putting the rounded numbers in b(i) above, approximate value of the numerical expression:  \[ \frac{146.8 \times 210.11}{69.5 \times 8.7} \]		16: 0 3		9.0
Hence find the greatest common factor (GCF) of 16 and 24.  (i) Round off each of the numbers 8.7, 69.5, 210.11 and 146.8 nearest unit.  (ii) By putting the rounded numbers in b(i) above, approximate value of the numerical expression:  \[ \frac{146.8 \times 210.11}{69.5 \times 8.7} \]				
Hence find the greatest common factor (GCF) of 16 and 24.  (i) Round off each of the numbers 8.7, 69.5, 210.11 and 146.8 nearest unit.  (ii) By putting the rounded numbers in b(i) above, approximate value of the numerical expression:  \[ \frac{146.8 \times 210.11}{69.5 \times 8.7} \]		e ligation		
Hence find the greatest common factor (GCF) of 16 and 24.  (i) Round off each of the numbers 8.7, 69.5, 210.11 and 146.8 nearest unit.  (ii) By putting the rounded numbers in b(i) above, approximate to value of the numerical expression:  \[ \frac{146.8 \times 210.11}{69.5 \times 8.7} \]	(ii)	T Table .		
i) Round off each of the numbers 8.7, 69.5, 210.11 and 146.8 nearest unit.  ii) By putting the rounded numbers in b(i) above, approximate value of the numerical expression: $ \frac{146.8 \times 210.11}{69.5 \times 8.7} $		311: N. 34. X	5	
i) Round off each of the numbers 8.7, 69.5, 210.11 and 146.8 nearest unit.  ii) By putting the rounded numbers in b(i) above, approximate value of the numerical expression: $ \frac{146.8 \times 210.11}{69.5 \times 8.7} $		and the second second	-	
i) Round off each of the numbers 8.7, 69.5, 210.11 and 146.8 nearest unit.  ii) By putting the rounded numbers in b(i) above, approximate value of the numerical expression: $ \frac{146.8 \times 210.11}{69.5 \times 8.7} $		to agric to the property of		
i) Round off each of the numbers 8.7, 69.5, 210.11 and 146.8 nearest unit.  ii) By putting the rounded numbers in b(i) above, approximate value of the numerical expression: $ \frac{146.8 \times 210.11}{69.5 \times 8.7} $				
i) Round off each of the numbers 8.7, 69.5, 210.11 and 146.8 nearest unit.  ii) By putting the rounded numbers in b(i) above, approximate value of the numerical expression: $ \frac{146.8 \times 210.11}{69.5 \times 8.7} $	Hen	ce find the greatest comn	non factor (GCF) of	16 and 24.
i) Round off each of the numbers 8.7, 69.5, 210.11 and 146.8 nearest unit.  ii) By putting the rounded numbers in b(i) above, approximate to value of the numerical expression: $ \frac{146.8 \times 210.11}{69.5 \times 8.7} $				
nearest unit.  By putting the rounded numbers in b(i) above, approximate value of the numerical expression: $ \frac{146.8 \times 210.11}{69.5 \times 8.7} $				
nearest unit.  By putting the rounded numbers in b(i) above, approximate value of the numerical expression: $ \frac{146.8 \times 210.11}{69.5 \times 8.7} $				
nearest unit.  By putting the rounded numbers in b(i) above, approximate value of the numerical expression: $ \frac{146.8 \times 210.11}{69.5 \times 8.7} $				
ii) By putting the rounded numbers in b(i) above, approximate value of the numerical expression: $\frac{146.8 \times 210.11}{69.5 \times 8.7}$	) i)	Round off each of the	numbers 8.7, 69.5,	210.11 and 146.8
value of the numerical expression: $\frac{146.8 \times 210.11}{69.5 \times 8.7}$	) i)		numbers 8.7, 69.5,	210.11 and 146.8
value of the numerical expression: $\frac{146.8 \times 210.11}{69.5 \times 8.7}$	) i)			
value of the numerical expression: $\frac{146.8 \times 210.11}{69.5 \times 8.7}$	) i)			
value of the numerical expression: $\frac{146.8 \times 210.11}{69.5 \times 8.7}$	) i)			
value of the numerical expression: $\frac{146.8 \times 210.11}{69.5 \times 8.7}$	) i)			
69.5 x 8.7		nearest unit.	3	11 2 21.01 ; 8
69.5 x 8.7		By putting the rounded	I numbers in b(i) abo	11 2 21.01 ; 8
10 - 3 × 10 = 1 = 1000 × 3 = 3 = 70		By putting the rounded	I numbers in b(i) abo expression:	11 2 21.01 ; 8
201.		By putting the rounded	I numbers in b(i) about expression:	11 2 21.01 ; 8
: 20.		By putting the rounded	I numbers in b(i) above expression: $\frac{146.8 \times 210.11}{69.5 \times 8.7}$	ove, approximate t
		By putting the rounded value of the numerical	I numbers in b(i) above expression: $\frac{146.8 \times 210.11}{69.5 \times 8.7}$	ove, approximate t
		By putting the rounded value of the numerical	I numbers in b(i) above expression: $\frac{146.8 \times 210.11}{69.5 \times 8.7}$	ove, approximate t
		By putting the rounded value of the numerical	I numbers in b(i) above expression: $\frac{146.8 \times 210.11}{69.5 \times 8.7}$	ove, approximate t

Candidate's	Number	*****************	
	14612111		

ಚ)	Simplify:
	1 /1

b) i) Increase 75 by 8 percent

ii) Decrease 121/2 by 12 percent

3. a) Perform the following operations

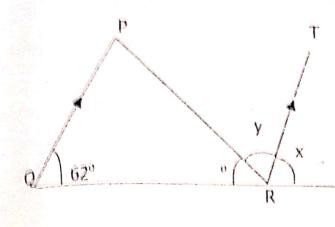
i) (5km + 50m + 3000cm) + (2km + 25m + 500cm)

giving your answer in metres

	Candidate's Number	
) (3.5	litres +500 millilitres) - (1.8 litres +700 millilitr	es)
	giving your answer in milliliters	i T
	4. 11.	
	A Comment	
<u></u>		
	V	
9		
	171 6	
	\.	
-		
A perso	on changed 450 US dollars and obtained 765,000 Te exchange rate in T. shillings per dollar?	. shil
A perso	on changed 450 US dollars and obtained 765,000 Te exchange rate in T. shillings per dollar?	. shil
A perso	on changed 450 US dollars and obtained 765,000 Telegraphic eexchange rate in T. shillings per dollar?	. shil
A perso	on changed 450 US dollars and obtained 765,000 T e exchange rate in T. shillings per dollar?	shil
A perso	on changed 450 US dollars and obtained 765,000 Te exchange rate in T. shillings per dollar?	- shil
A perso	on changed 450 US dollars and obtained 765,000 Te exchange rate in T. shillings per dollar?	shil
A perso	on changed 450 US dollars and obtained 765,000 Te exchange rate in T. shillings per dollar?	. shil
A perso	on changed 450 US dollars and obtained 765,000 Te exchange rate in T. shillings per dollar?	. shill
A perso	e exchange rate in T. shillings per dollar?	. shill
A perso	e exchange rate in T. shillings per dollar?	- shill
A perso	e exchange rate in T. shillings per dollar?	. shill
A perso	e exchange rate in T. shillings per dollar?	. shill
A perso	e exchange rate in T. shillings per dollar?	- shill
A perso	e exchange rate in T. shillings per dollar?	. shill

Candidate's Number .....

a) In the figure 1 below, find the size of the angles marked by the letters y and y.



4.

S (figure 1)

b) A rectangular garden of length 24 metres has an area of 240 metre square. Determine:

i) Its width

ii)	Candidate's Number
עיי	The length of its diagonal
	T = 2
	the state of the s
g I	
	and the second of the second o
a)	What number must be added to the expression $x^2 + 6x + 7$ to make
	perfect square?
	`
*	
))	Ali is now 12 years younger than her sister Masha. The ratio of their three years ago was 1:3.
))	Ali is now 12 years younger than her sister Masha. The ratio of their three years ago was 1:3.  i) Translate the above statement into a mathematical equation.
))	three years ago was 1:3.
))	three years ago was 1:3.
))	three years ago was 1:3.
	three years ago was 1:3.
	three years ago was 1:3.
))	three years ago was 1:3.

	· and
	Hence, by solving the resulting equation find their present ages.
à	
e	for $t: 4t - 2(5 - t) = 8 - 3(t + 1)$
e	for $t: 4t-2(5-t)=8-3(t+1)$
e	for t : 4t – 2 (5 – t) = 8 – 3 (t + 1)
e	for $t: 4t-2(5-t)=8-3(t+1)$
e	for $t: 4t - 2(5 - t) = 8 - 3(t + 1)$
e	for t : 4t – 2 (5 – t) = 8 – 3 (t + 1)
e	for $t: 4t - 2(5 - t) = 8 - 3(t + 1)$
e	for t: 4t – 2 (5 – t) = 8 – 3 (t + 1)
e	for t: 4t – 2 (5 – t) = 8 – 3 (t + 1)
e 	for $t: 4t - 2(5 - t) = 8 - 3(t + 1)$
e	for $t: 4t-2(5-t)=8-3(t+1)$
e	for t: 4t - 2 (5 - t) = 8 - 3 (t + 1)
e	for $t: 4t - 2(5 - t) = 8 - 3(t + 1)$
e	for $t: 4t - 2(5 - t) = 8 - 3(t + 1)$
e	for $t: 4t - 2(5 - t) = 8 - 3(t + 1)$
e	for $t: 4t - 2(5 - t) = 8 - 3(t + 1)$

a) Rationalize the denominator and simplify

:	8.4

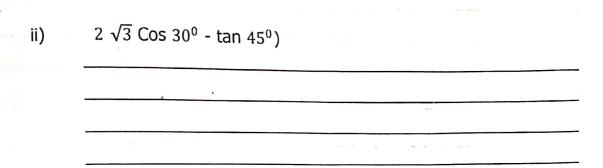
b) Obtain the values of x and y such that  $2^{x-y} = 16$  and  $3^{x-y} = 9$ 

200

1	(	Can	did	ate	's I	Nu	mb	er				 
												975

a) Determine the exact values of:





b) If  $Cos P = \frac{15}{17}$  where P is acute angle, find the value of

i) Sin P

(ii) tan P

Some for y

$$\log_{10}^{(y+7)} = \log_{10}^{y} + 1$$

Find the value of  $\log \sqrt[3]{\left(\frac{b}{a}\right)^2}$  given that  $\log a = 1.83$  and  $\log b = 2.73$ 

- Section 1	
	·
e e l	
	The Art of Art of
37	
•	
26	

		Find the	Candidate's Number
	h.\	.\	Plot the points $A(4,0)$ , $B(0,3)$ and the origin on a graph part the resulting shape when the
	b)	i)	Plot the points $A(4,0)$ , $B(0,3)$ and the original when the what is the common name of the resulting shape when the points are joined?
•			
		ii)	Calculate the length of the line from A to B.
0.	a)	i)	How many subsets are there in a set with three (3) eleme

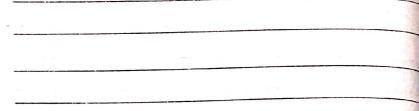
Find more free educational resources at:

all subs	sets of the set S =	Sa b c	11 AM. S. 11 10 1	
List down all	sets of the set S =	[4, 0, 0	5	
	/			
		- 4		
			*	
The second second				
market and the second s				. 1
(12 m) (12 m)				

- Out of 200 students appeared in Form Three Entrance Examination, 140 passed Mathematics and 100 passed Physics. If 40 students failed both subjects. Find by using a Venn diagram; the number of students who passed.
  - i) Both subjects
- (ii) Physics but not Mathematics

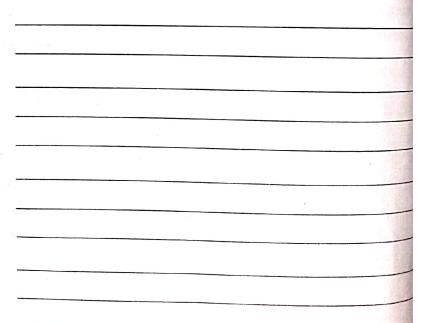
11. a) i)

Express the equation  $\frac{x+3}{x-1} = 2(x-5) + 11$  in the form  $x^2 + bx + c = 0$  where b and c are integers.



y **						
·	,	 h =!			 [News I	
			 		 1 0 100	
- *1	•	 J 8		4.		

ii) Solve the resulting equation in part 11 (a) (i) above by factorization method.



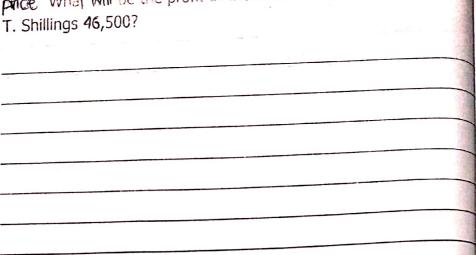
Candidate	's Number	

b) Given that  $m * n = \frac{1}{2} (m + n) - m$ . Evaluate (9 \* 17) \* 6.

.2. a) If A:B = 3:4 and B:C = 5:6, find C:A.

Arajii .	
The state of the s	
-	
57 H	
200	
-	

b) In setting the selling price P of an article, a shopkeeper doubled its price. What will be the profit of the article whose selling price is T. Shillings 46,500?



13. a) In the figure 2 below, AB = 4cm, BC = 3cm and the area of the repart ACDE is  $20m^2$ .

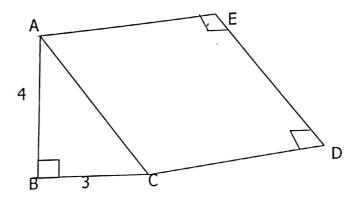
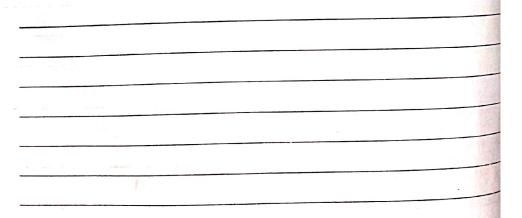


Figure 2

i) Determine the perimeter of the polygon ABCDE.



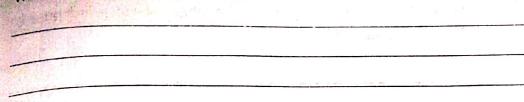


Figure 3 shows triangles KLM and KPN. b)

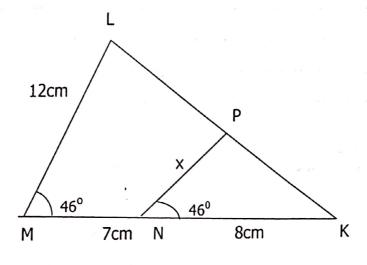


Figure 3

i)	Show that these triangles are similar
----	---------------------------------------

Candidate	<b>'</b> S	Num	ber	-
5 20 10 Car ar ar ar				1

H)	Using	similarity	property	, calculate	e the lengt	h of the	side	labele
,	<b>x</b> .	(1. 35 A)						

14. a)	The ages of 30 people (adults) who attended a clinic on one part
	were recorded as follow

i)	Prepare a frequency distribution which includes cumulative
	frequencies by grouping the ages into class intervals 25-29
	34,, 55 – 59.

· ·	
	70
	100
	121

	the sumulative frequency curve (agive)
ii) Hence	draw the cumulative frequency curve (ogive).
	en e
•	
	Week)
	A Section 1981 And the section of th
•	
-	
-	
	v i v i v i v i v i v i v i v i v i v i
-	
-	
h.	
-	

Candidate's Number .....

E)	Candidate's Number
	Ten (10) packets of a chemical are such that, five (5) weigh 20.010 Ten (10) packets of a chemical are such that, five (5) weigh 20.010 each. Calculate
6)	Ten (10) packets of a chemical are such that, five (3) weigh 19.98 g each and 2 weigh 20.03g each. Calculate three (3) weigh 19.98 g each and 2 weigh 20.03g each.
2)	three (3) weigh 19.98 g each and 2 weight mean (average) mass of the packets.
1	mean (average) mass or the packets.
	Control of the second of the s
	e in the reserve to the second of the second
LOGIC AND THE STREET	
- 5	
to the second se	
	Apparent to the second of the
	20