UNIVERSITY OF JOHANNESBURG
FACULTY OF EDUCATION
JUNE EXAMINATION 2018

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PROGRAMME:	B ED
MODULE:	MATHEMATICS FOR FOUNDATION PHASE 2A
CODE:	MFP10A2
TIME:	2 HOURS
MARKS:	100.
EXAMINER:	Prof. K. LUNETA
MODERATOR:	Prof C. LONG

INSTRUCTIONS.

This paper consists of 5 pages. There are 8 questions. Answer all of them. No calculators allowed.

QUESTION 1

Answer the following questions

i. Draw and name four different types of triangles. (2)
ii. Define the following terms

    a. A line segment
    b. A ray
    c. A circumference of a circle (3)

iii. What is the area of a triangle whose height is 12 cm and the base is 10 cm? (2)

iv. Find the perimeter and area of $\frac{3}{4}$ of a circle of radius 14 cm. (4)

v. Draw a

    a. a reflex angle
    b. a concave polygon
    c. an Isosceles trapezium

    (3)

vi. Name and draw 5 different quadrilateral shapes (5)

vii. Draw any kite and show its line of symmetry and diagonals (2)

viii.   Draw the pentagonal prism and show its plane symmetries.   (2)

ix.   Draw the net of a triangular pyramid   (2)

x.   Find the values of a, b and c in the diagram below
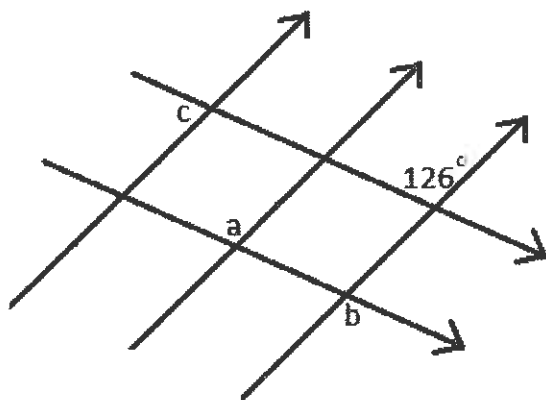
(3)

[28]

QUESTION 2

i.   Give two examples in a house hold that could be used to introduce the concept of polygons to a grade 3 class?   (2)

ii.   Name 10 different types of polygons other than a kite and a rhombus.
                                                                          (5)

iii.   What example could you use to explain a polyhedron?   (1)

iv.   Name 10 different types of polyhedrons   (5)

v.   State 5 properties of a rhombus?   (3)

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QUESTION 3

i.   Find the total surface area of a cylinder whose radius is 14 cm and the height is 20 cm if it is closed on both sides.   (4)

ii.   Find the total surface area of regular Nonagonal prism if it is open on both side and the dimensions are a height of 100 cm and a length of 200 cm.
                                                                          (4)

[8]

QUESTION 4

i.   The shape below shows a skeleton of what polyhedron?   (2)

ii. How many edges are there?   (1)

iii. How many faces are there?   (1)

iv. How many vertices are there?   (1)

v. Find the total surface area of the shape below given the area of the base
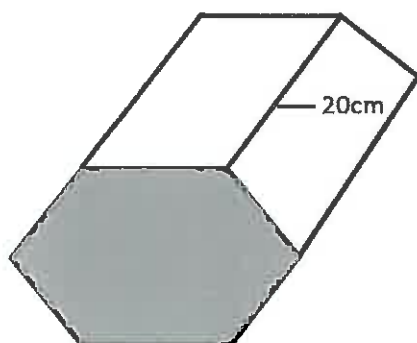

triangle is 56 cm². 8cm
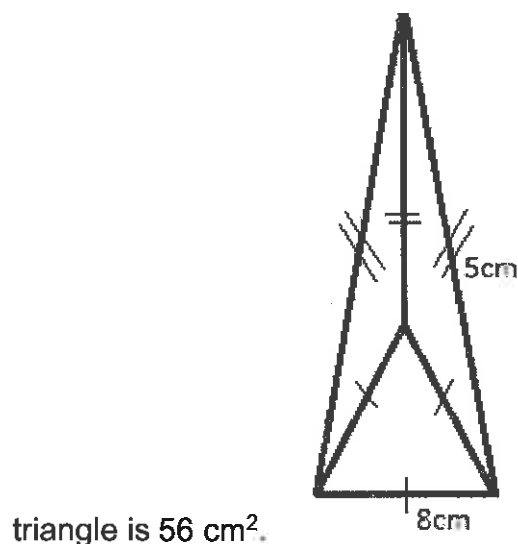
(4)

vi. The volume of a prism is 495 cubic millitres. Find the area of the base if the heaight is 15 cm. (3)

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QUESTION 5
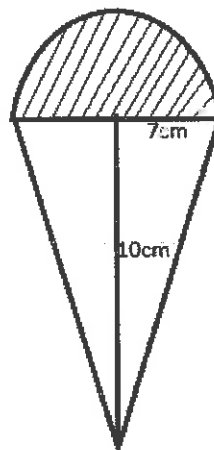
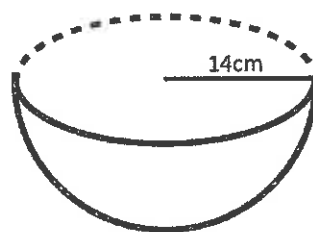I. If the area of the shaded side of the regular hexagon below is 1500cm², find its volume.

(4)

ii. Find the volume of the semi cone below if its perpendicular height h is 10 cm and the radius r is 7 cm. (4)

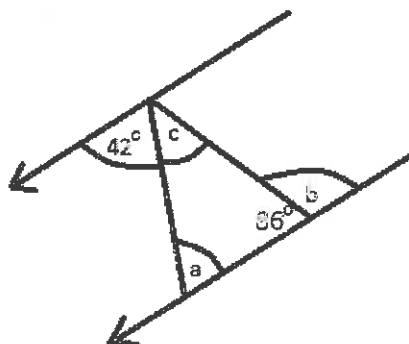iii.   Find the volume and surface area of the semi sphere below whose radius
        is 14cm.   (6)

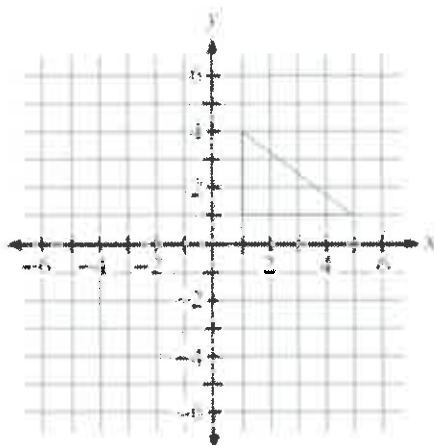

[14]

QUESTION 6

Find the values of a, b, and c below

[3]

QUESTION 7

iv.   Define the term tessellation in mathematics.   (2)
v.   Draw a tessellation made up of equilateral triangles   (2)

QUASTION 8

i.   Define a rigid transformation.   (1)
ii.   Name two non-rigid transformations   (2)
iii. Draw the image of the triangle when translated 2 units to the left and 3
      units upwards.   (3)
iv.   Draw the image of the triangle blow when reflected on the line x = 0 (3)
v.   Draw the image of the triangle below when rotated clockwise about the
      origin through 60⁰.   (6)

                                                                    [15]

END OF EXAMINATION