MATHEMATICS FORM 3

KAGONDO SECONDARY SCHOOL

END TERM 3 2016

Attempt all questions provided in this paper

1. Evaluate without using a calculator (3mks)

$[5/6 \text{ of } (4/\ 1/3 - 3/5/6)] / (5/12 \times 3/25 + 1/5/9\ /2/\ 1/3)$

2. A quantity P is partly constant and partly varies as the square of Q when Q=2, P=40 and when Q=3, P=65.Determine the value of P when Q=4 (4 mks)

3. Wambua invested sh.6400 at 15% per annum compound interest, what was the amount after 3 years (3mks)

4. The mass of two smaller solid are 324g and 768g.Find

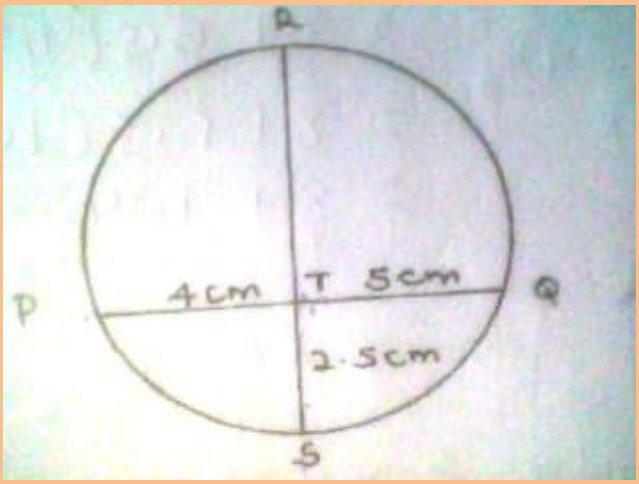
a) Height of the smaller solid if the height of the bigger solid is 20cm (2mks)

b) The surface area of the smaller solid if the surface area of the bigger solid is $40cm^2$ (2mks)

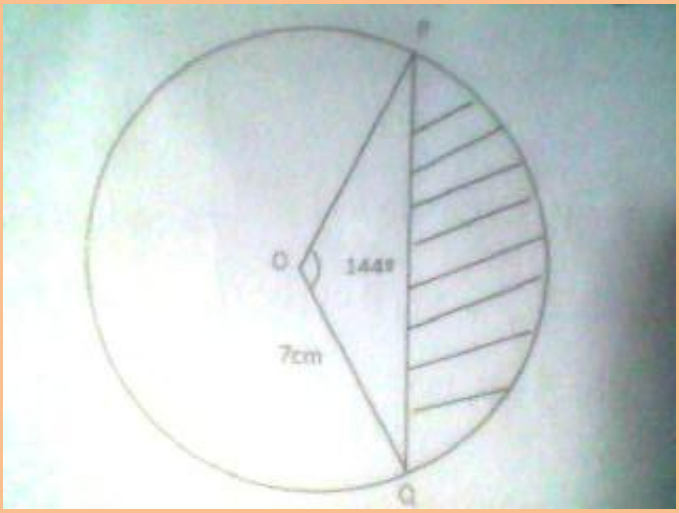
5 a) expand $(2+x)^4$ (1mk)

b)Use the expansion in (a) above to. Find the value $(2.01)^4$ to 4d.p (3mks)

6.In the figure below PT=4 cm and TQ=5 cm and TS=2.5 cm.Find TR by calculation (2mks)



7.The figure below shows a circle center O diameter 14 cm.Angle $POQ=144^o$



Calculate the area of the shaded region (4mks)

8.Point B is 30m away from point A at a bearing of 150^{o}.Point C is 25 cm from A at a bearing of 120^{o}.Find how far C is from B (3mks)

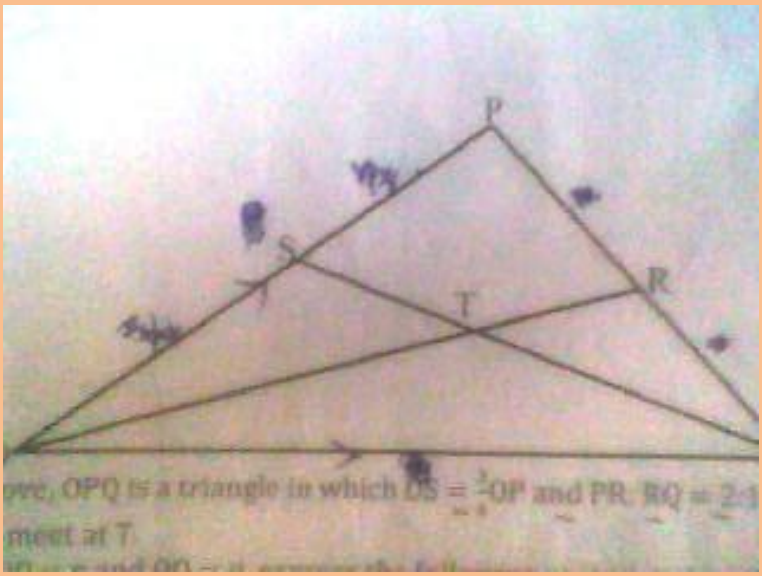
9.The sum of two numbers exceeds their product by one. Their difference is equal to their product less five. Find the two numbers (3mks)

10.There was a fund-raising in Matisi high school. One seventh of the money that was raised was used to construct a teacher's house and two thirds of the remaining money was used to construct classrooms. If sh.300,000 remained, how much money was raised(4mks)

11.A van travelled from Kitale to Kisumu a distance of 160km.The average speed of the van for the first 100 km was 40km/hr. and the remaining part of the journey its average speed was 30km/hr. Calculate the average speed for the whole journey (3mks)

12.The cost of 7 shirts and 3 pairs of trousers is sh.2950 while that of 5 pairs of trousers and 3 shirts is less by 200.How much will Dan pay for 2 shirts and 2 pairs of trousers (3mks)

13.In the figure below, OPQ is a triangle in which OS=3/4 OP and PR:RQ=2:1 .Line OR and SQ meet at T



a)Given that OP=P and OQ=q, express the following vectors in terms of p and q

i)PQ (1mk)

ii)OR (1mk)

iii)SQ (1mk)

b)You are further given that ST=mSQ and OT=nOR.Determine the value of m and n (6mks)

14.Suppose z varies directly as the square of x and inversely as the square root of y.

a)Find z in term of x and y (2mks)

b)If x increase by 20% and y decreases by 19%, find the percentage change in z (5mks)

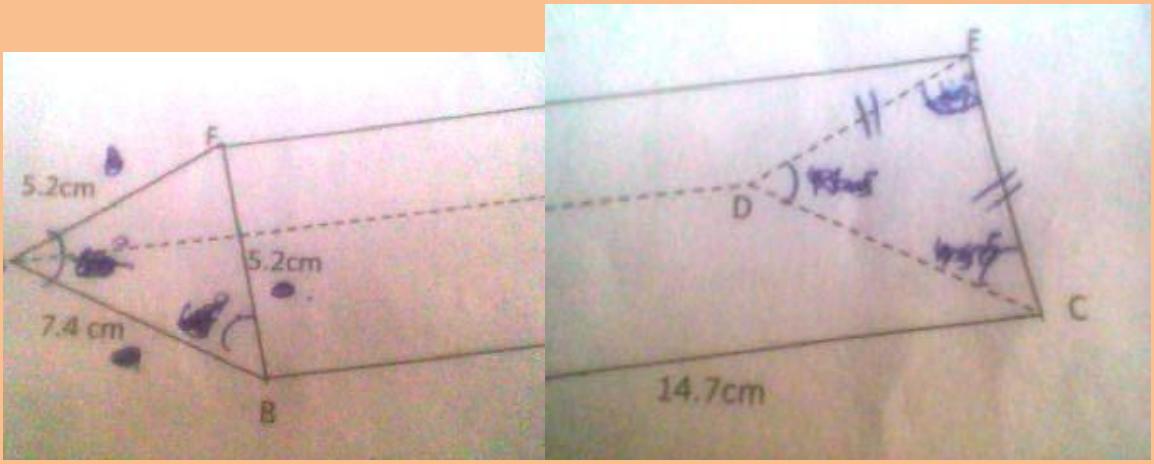
c)If z=3 when x=6 and y=18, find z when x=12 and y=25m (3mks)

15.Solve the simultaneous equations below using the matrix method (10mks)

3x +y =4

4x + 3y =7

15.The diagram below shows a right glass prism ABCDEF with dimensions as shown



Calculate

a) the perimeter of the prism (2mks)

b) The total surface area of the prism (3mks)

c) The volume of the prism (2mks)

d) The angle between the planes AFED and BCEF (3mks)