FORM ONE DECEMBER ASSIGNMENT.

WEEK 1 AND 2

1. Using a ruler and a pair of compasses only,
a. Construct a triangle ABC in which AB = 9cm, AC = 6cm and angle BAC = 37½°
b. Drop a perpendicular from C to meet AB at D. Measure CD and hence find the area of the triangle ABC
c. Point E divides BC in the ratio 2:3. Using a ruler and Set Square only, determine point E. Measure AE.
2. Using a ruler and a pair of compasses only, draw a parallelogram ABCD in which AB = 6cm, BC = 4cm and angle BAD = 60°. By construction, determine the perpendicular distance between the lines AB and CD.
3. Without using a protractor, draw a triangle ABC where <CAB = 30°, AC = 3.5cm and AB = 6cm. measure BC.
4.
a. Using a ruler and a pair of compass only, construct a triangle ABC in which angle ABC =37.5°, BC =7cm and BA = 14cm
b. Drop a perpendicular from A to BC produced and measure its height
c. Use your height in (b) to find the area of the triangle ABC
d. Use construction to find the radius of an inscribed circle of triangle ABC

WEEK 3 AND 4.

5. In this question use a pair of compasses and a ruler only
a. Construct triangle PQR such that PQ = 6 cm, QR = 8 cm and <PQR = 135°
b. Construct the height of triangle PQR in (a) above, taking QR as the base
6. On the line AC shown below, point B lies above the line such that <BAC = 52.5° and AB = 4.2cm. (Use a ruler and a pair of compasses for this question)
a. Construct <BAC and mark point B
b. Drop a perpendicular from B to meet the line AC at point F. Measure BF

7. Senjeni and Mkimwa entered into a business partnership in which they contributed ksh. 120,000 and ksh 150,000 every year respectively. After one year, Kuku joined the business and contributed ksh. 90,000.

a. Calculate the ratio of their investment after 3 years of business (3mks)

b. It was agreed that 30% of the profits after 3 years be used to cater for the cost of running the business, while the remaining would be shared proportionally. Calculate each persons share, if the profit made after three years was ksh. 187,000 (4mks)

c. If each of them invested their shares back in the business, find their new individual nts at the beginning of the fourth year (3mks)

8. The population of elephants in Kenya's game reserves is 40,000 at present. If their population increase is estimated to be 30% every 10years, calculate their population in 30 years time to the nearest 10.

(3mks)

9. Fifteen men working for eight hours a day can complete a certain job in exactly 24 days.For how many hours a day must sixteen men work inorder to complete the same job in exactly 20 days.

WEEK FIVE AND SIX.

1. Three mountains Mikai, Kembo and Chaka in a village are situated in such a way that Kembo is 900m on a bearing of 120^0 from Mikai. Mt. Chaka is 1200m on a bearing of 030^0 from Kembo.
   (i) Draw a sketch showing the position of the three mountains (1 mk)
   (ii) Calculate the distance of Mt. Chaka from Mt. Mikai (2 mks)
2. Shopping centres XY and Z are such that Y is 12km south of X and Z is 15kn from X. Z is on a bearing of $N30^0W$ from Y. Calculate and give compass bearing of Z from X. (4mks)
3. Four telephone posts PQR and S stand on a level ground such that Q is 28m on a bearing of 060^0 from P. R is 20m to the south of Q and S is 16m on a bearing of 140^0 from P.
   (a) Using a scale of 1cm represent 4m show the relative positions of the posts. (4mks)
   (b) Find the distance and bearing of R from S. (3mks)
   (c) If the height of post P is 15.6m. on a separate scale drawing, draw a diagram and determine the angle of depression of post R from the top of post P. (3mks) (Same scale as above)
4. Alice chepchumba on her cycling practice cycled on a bearing of 120^o for 5.5km, then on a bearing of 200^o for 8km finally he turned northwards for 13.5km, by scale drawing determine her final position from starting point. (4 marks)
5. A surveyor recorded the measurement of field in a field book using lines AB = 260m as shown below.

	B	
	130	R40
	70	Q10
	50	P20
S50	10	
	A	

   a) Use a suitable scale to draw the map of the field. (2 marks)
   b) Find the area of the field. (2 marks)
6. (a) In a Safari rally drivers are to follow route ABCGA. B is 250km from A on a bearing of 0750 from A. C is on a bearing of 1100 from A and 280km from B. the bearing of C from D is 1400 and at a distance of 300km. By scale drawing, show the position of the point A, B, C and D. (4 mks)

(b) Determine
   (i) Distance of A from C (2 mks)
   (ii) The bearing of B from C (1 mk)
   (iii) The distance and bearing of A from D (3 mks)