FORM IV TUNE UP 2015

NAME _ _ MARKING SCHEME _ AD NO _ _ _ _ _

1 An article which is marked for shs 45,000 is sold to a customer for shs 39,375. What percentage discount is the customer allowed? (2 marks)

45,000
− 39 375
5,625

DISC 5,625

$\frac{5625}{45,000} \times 100$

2 (a) Find the greatest common divisor of the terms $8a^4b^3$ and $2a^2b^5$ (1 mark)

$8a^4b^3$ | $2a^2b^5$

$2a^2b^3$

$2a^2b^3$

(b) Hence factorize completely the expression $8a^4b^3 - 2a^2b^5$ (2 marks)

$2a^2b^3(4a^2 - b^2)$

3 Evaluate $\left[\frac{8}{125}\right]^{1/3} \times \left[\frac{16}{25}\right]^{-3/2} \times \left[\frac{64}{625}\right]^{1/2}$ (3 marks)

$\frac{8^{1/3}}{125^{1/3}} \times \frac{25^{3/2}}{16^{3/2}} \times \frac{64^{1/2}}{625^{1/2}}$

$\frac{2^{3\times1/3}}{5^{3\times1/3}} \times \frac{5^{2\times3/2}}{4^{2\times3/2}} \times \frac{8^{2\times1/2}}{25^{2\times1/2}}$

$\frac{2}{5} \times \frac{5^3}{4^3} \times \frac{8}{25}$

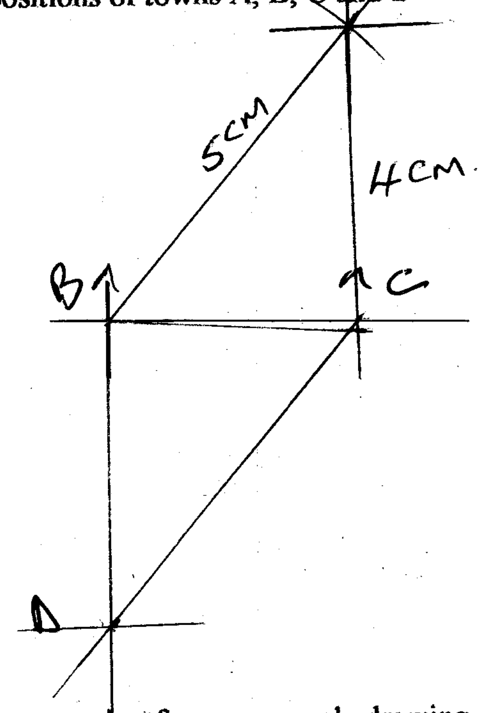
$\frac{2^1 \times 5^3 \times 2^3}{5 \times 2^6 \times 5^2}$

$\frac{5^3 \times 2^4}{2^6 \times 5^3}$

$\frac{1}{2^2}$ or 2^{-2}

4\. Town A is 250km on a bearing of 040^0 from town B. Town C is 200 km from town A and due east of town B. Fourth town D is on a bearing of 2200 from town C and due south of town B.

(a) Using a scale of 1cm: 50km, draw an accurate scale drawing showing the positions of towns A, B, C and D (5 marks)



(b) By measuring from your scale drawing, determine

(i) The distance BC (1 mark)

~~3.4~~×50 = ~~170~~ KM.

4.5×50

(ii) The distance BD (1 mark)

5.~~4~~×50 = 200KM.

2.8×50

(iii) The distance CD (1 mark)

~~7.0~~×50 = 265KM.

3.5

(iv) The bearing of A from C (2 marks)

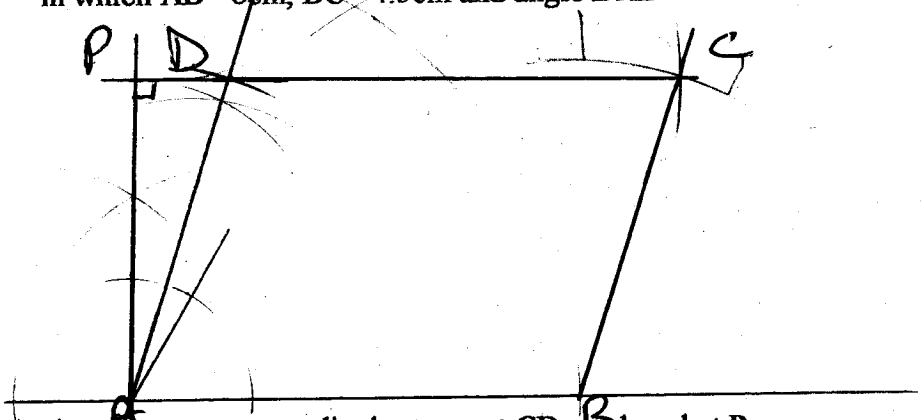
~~90~~°

358°

360°

~~345~~°

5. (a) Using a ruler and a pair of compasses only, construct a parallelogram ABCD in which AB= 6cm, BC= 4.5cm and angle DAB = 75^0. (3 marks)



(b) At A construct a perpendicular to meet CD produced at P. (1mrk)

(c) Measure AP and hence calculate the area of the parallelogram (2 marks)

AP = 4.4 cm

$\frac{1}{2}$ 4.4 × 6

26.4 cm^2

(d) Mark a point Q on AP produced such that the area of triangle ABQ is equal to the area of the parallelogram (2 marks)

$\frac{1}{2} \times 6 \times x = 26.4$

$x = \frac{26.4}{3}$

$x = 8.8$ cm

(e) Complete the triangle ABQ and state the ratio AQ: AP (2 marks)

AQ = 8.8

AP = 4.4

8.8 : 4.4

2 : 1