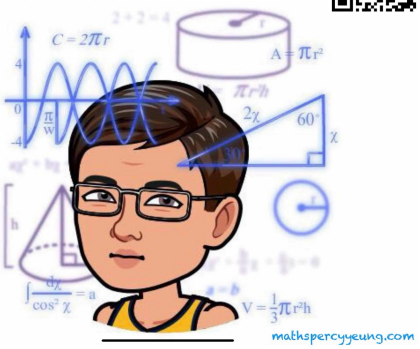
Grade 9 Mathematics Term 1 Consolidated Assignment 2

(Very difficult !)



Content: Ch.8 Coordinates Geometry of Straight Lines

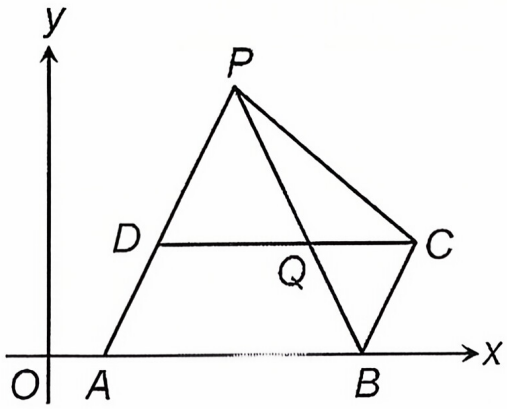
1. In the figure, $ABCD$ is a parallelogram. AD is produced to P such that BP and DC intersect at Q. It is given that the areas of $ABCD$ and $\triangle PAB$ are 48 sq. units and 60 sq. units respectively.

   (a) Find $AD : DP$ and $DQ : QC$.

   (b) If the coordinates of A and D are (2, 0) and (4, 4) respectively,

   (i) find the coordinates of B, C and P,

   (ii) hence, find the perimeter of the quadrilateral $ABCP$.
   (Give your answer correct to 3 significant figures.)



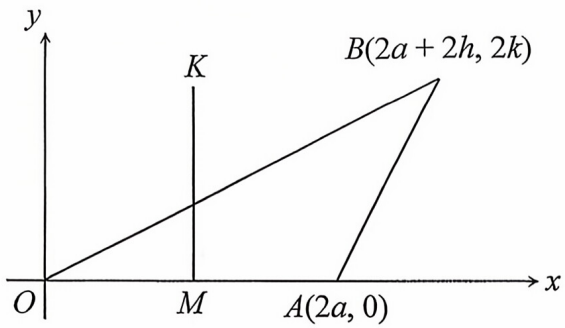
(Challenging_3A08_e Q.11)

2. In the figure, the origin O, A and B are the vertices of a triangle. M is a point on OA such that MK is the perpendicular bisector of OA.

(a) Express the x-coordinate of K in terms of a.

(b) L_1 is the perpendicular bisector of AB and it passes through K. Prove that the y-coordinate of K is $\dfrac{h(a+h)}{k}+k$.

(c) L_2 is the perpendicular bisector of OB. Prove that MK, L_1 and L_2 intersect at K.



(Challenging_3A08_e Q.13)

END OF ASSIGNMENT