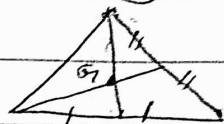


## Formulae / Concepts

I (1) Centroid of a triangle  $\equiv \left( \frac{x_1 + x_2 + x_3}{3}, \frac{y_1 + y_2 + y_3}{3} \right)$

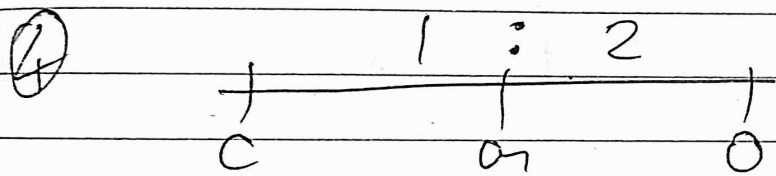
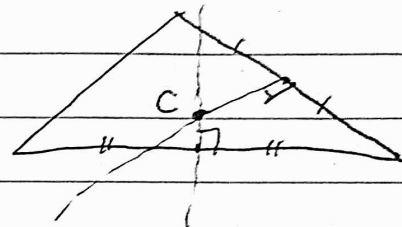
II (2) Centroid is intersection of Medians.  
[G]



III (2) Orthocentre is intersection of Altitudes.  
[O] [Formulae need not to be learned]



IV (3) Circumcentre is intersection of perpendicular bisectors.  
[C] [Formula need not to be learned]

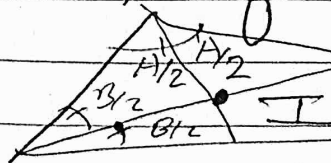


$$\boxed{3\vec{OG} = \vec{O} + 2\vec{C}}$$

V (5) Incentre formula is important

$$I \equiv \left( \frac{ax_1 + bx_2 + cx_3}{a+b+c}, \frac{ay_1 + by_2 + cy_3}{a+b+c} \right)$$

VI (6) Incentre is the Intersection of angle bisectors



(7) Eq<sup>n</sup> of angle bisector of lines  $\begin{cases} l_1x + m_1y + n_1 \\ l_2x + m_2y + n_2 \end{cases}$   
is  $\frac{l_1x + m_1y + n_1}{\sqrt{l_1^2 + m_1^2}} = \pm \frac{l_2x + m_2y + n_2}{\sqrt{l_2^2 + m_2^2}}$