Q2. Let $A(1, 0)$, $B(6, 2)$ and $C\left(\frac{3}{2}, 6\right)$ be the vertices of a triangle ABC. If P is a point inside the triangle ABC such that the triangles APC, APB and BPC have equal areas, then the length of the line segment PQ, where Q is the point $\left(-\frac{7}{6}, -\frac{1}{3}\right)$, is ———.

[Main Jan. 7, 2020 (I)]

Sol 2.

(5) P will be centroid of ΔABC

$$P\left(\frac{17}{6}, \frac{8}{3}\right) \Rightarrow PQ = \sqrt{(4)^2 + (3)^2} = 5$$