1. The vertices of ΔABC are $A(2,2),\ B(-4,-4)$ and $C(5,-8)$. Find the length of a median of a triangle, which is passing through the point C.

(1) $\sqrt{65}$ (2) $\sqrt{117}$

(3) $\sqrt{85}$ (4) $\sqrt{116}$

2. The points which trisect the line segment joining the point $(0,\ 0)$ and $(9,\ 12)$ are -

(1) $(3,\ 4),\ (6,\ 8)$ (2) $(4,\ 3),\ (6,\ 8)$

(3) $(4,\ 3),\ (8,\ 6)$ (4) $(3,\ 4),\ (8,\ 6)$

3. If $P(1,2),\ Q(4,6),\ R(5,7)$ and $S(a,b)$ are the vertices of a parallelogram $PQRS$, then

(1) $a=2,\ b=4$ (2) $a=3,\ b=4$

(3) $a=2,\ b=3$ (4) $a=3,\ b=5$

4. The point A divides the line segment joining the points $(-5,1)$ and $(3,5)$ in the ratio $k:1$ internally and the coordinates of points B and C are $(1,5)$ and $(7,-2)$ respectively. If the area of ΔABC is 2 sq. units, then the sum of all the values of k is equal to

(1) $\frac{32}{9}$ (2) 7

(3) $\frac{94}{9}$ (4) $\frac{31}{9}$

5. The area of a triangle is 5. If two of its vertices are $(2,1),\ (3,-2)$ and the third vertex lies on the line $y=x+3$, then the third vertex is -

(1) $\left(-\frac{7}{2},-\frac{13}{2}\right)$ (2) $\left(-\frac{7}{2},\frac{13}{2}\right)$

(3) $\left(\frac{7}{2},-\frac{13}{2}\right)$ (4) $\left(\frac{7}{2},\frac{13}{2}\right)$

6. Two vertices of a triangle $(5,\ 4)$ and $(-2,\ 4)$. If its centroid is $(5,\ 6)$ then the third vertex has the coordinates -

(1) $(12,\ 10)$ (2) $(10,\ 12)$

(3) $(-10,\ 12)$ (4) $(12,\ -10)$

7. If the sides of a triangle are given by the equations $x-y+1=0,\ x+y+3=0$ and $2x+5y-2=0$, then the coordinates of its orthocentre are

(1) $(2,1)$ (2) $(2,-1)$

(3) $(-2,1)$ (4) $(-2,-1)$

8. Orthocentre of a triangle whose vertices are $(0,0),(3,4)$ and $(4,0)$ is

(1) $(3,7/3)$ (2) $(3,5/4)$

(3) $(5,-2)$ (4) $(3,3/4)$

9. The vertices of a triangle are $A(0,0),\ B(0,2)$ and $C(2,0)$, then find the distance between its orthocentre and circumcentre.

(1) 0 (2) $\sqrt{2}$ units

(3) $\frac{1}{\sqrt{2}}$ units (4) $\sqrt{3}$ units

10. If the middle points of the sides of a triangle be $(-2,\ 3),\ (4,\ -3)$ and $(4,\ 5)$, then the centroid of the triangle is -

(1) $\left(\frac{5}{3},2\right)$ (2) $\left(\frac{5}{6},1\right)$

(3) $\left(2,\frac{5}{3}\right)$ (4) $\left(1,\frac{5}{6}\right)$