**5th Year Coordinate Geometry Test** **Name……**

**1.) Find the area of the triangle whose vertices are (2,3), (5,1) and (2,0)**

**2.)** The area of the triangle with vertices $(-2, -1)$, $(1, 2)$ and $(k, 13)$ is 6. Find the values of $k$.

**3.)** (i) Verify that $(2, 6)$ is on the line $x - 2y + 10 = 0$.

(ii) If the line $2x + ky - 12 = 0$ contains the point $(3, 2)$, find the value of $k$.

**4.)** Write down the equation of any line parallel to $\ell: 4x + y = 6$.
Hence find the equation of the line parallel to $\ell$ which forms a triangle of area 18 square units in the first quadrant.

**5.)** $A(2, -3)$ and $B(x, y)$ are two points in the plane.
The point $P(6, 1)$ divides $[AB]$ internally in the ratio $2:1$.
Find the values of $x$ and $y$.

**6.)** A(4, −3) and B(−2, 0) are the end points of a line segment. The point P(2, −2) divides [AB] internally in the ratio $h:k$. Find the ratio $h:k$.

**7.)** Find the coordinates of the orthocentre of the triangle with vertices A(4, 2), B(−2, 5) and C(−1, −3).

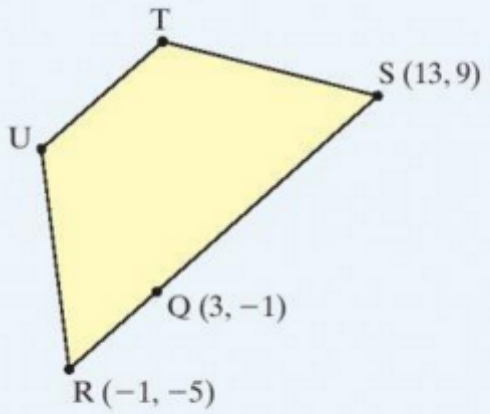
**8.)** Verify that the line $3x - y - 4 = 0$ contains the point $(2, 2)$.
Hence find the shortest distance between the parallel lines $3x - y - 4 = 0$ and $6x - 2y + 7 = 0$.

**7.)** Show that the points $(3, 4)$ and $(9, 3)$ lie on opposite sides of the line $3x + 4y - 36 = 0$.

**8.)** Find the obtuse angle between the lines $x - 2y - 1 = 0$ and $3x - y + 2 = 0$.

**9.)** Find the equations of the two lines through the point $(4, 2)$ which make angles of $\tan^{-1}\left(\frac{2}{3}\right)$ with the line $x + y - 2 = 0$.

**10.)** RSTU is a quadrilateral where R = (−1, −5) and S = (13, 9).
Q(3, −1) lies on the line RS.




(i) The coordinates of U are $(-2k, 3k)$, where $k \in \mathrm{R}$ and $k > 0$.
The area of the triangle RQU is 28 square units.
Find the value of $k$.

(ii) The slope of TS is $-\frac{3}{11}$ and SR is parallel to TU.
Find the coordinates of T.