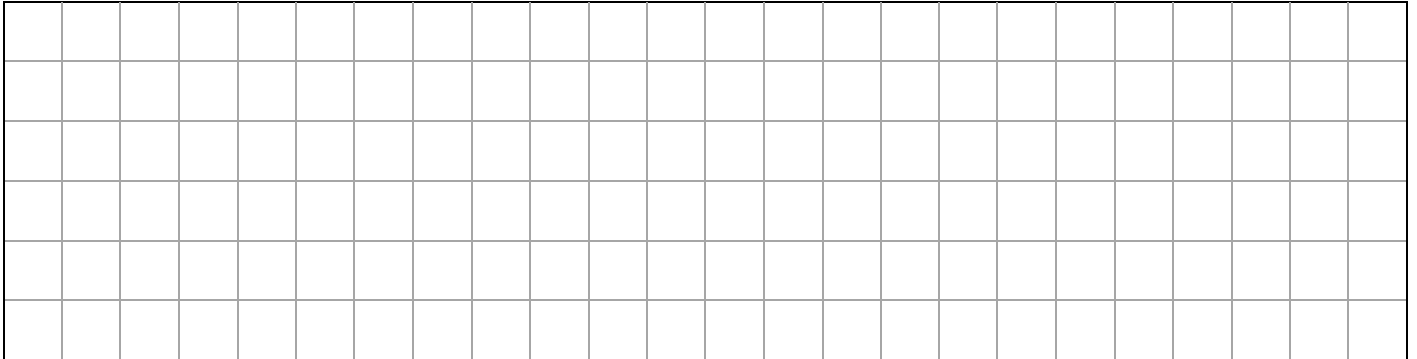


Coordinate Geometry of the Line

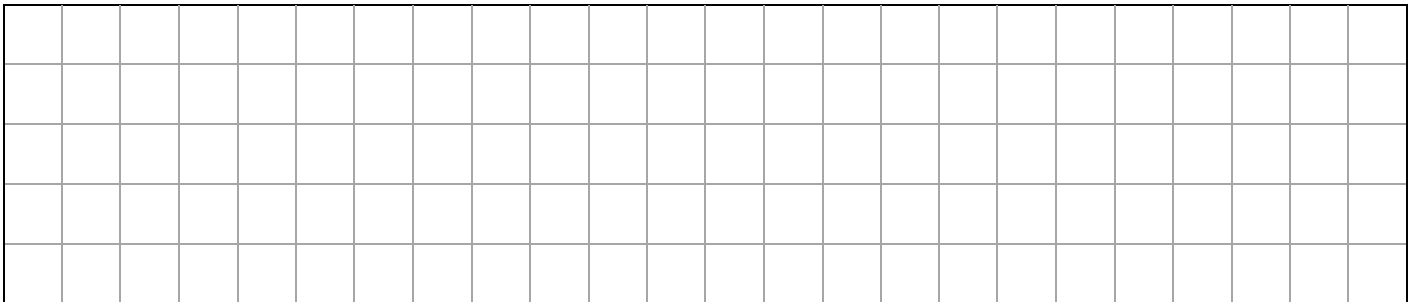
Question 1 (Warm Up)

$A(-4,1)$ and $B(2, -3)$ are two points.

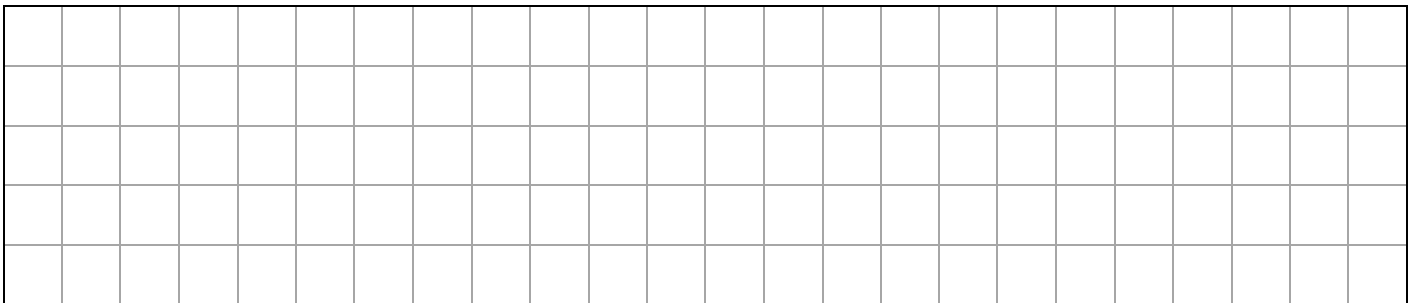
(i) Calculate $|AB|$.



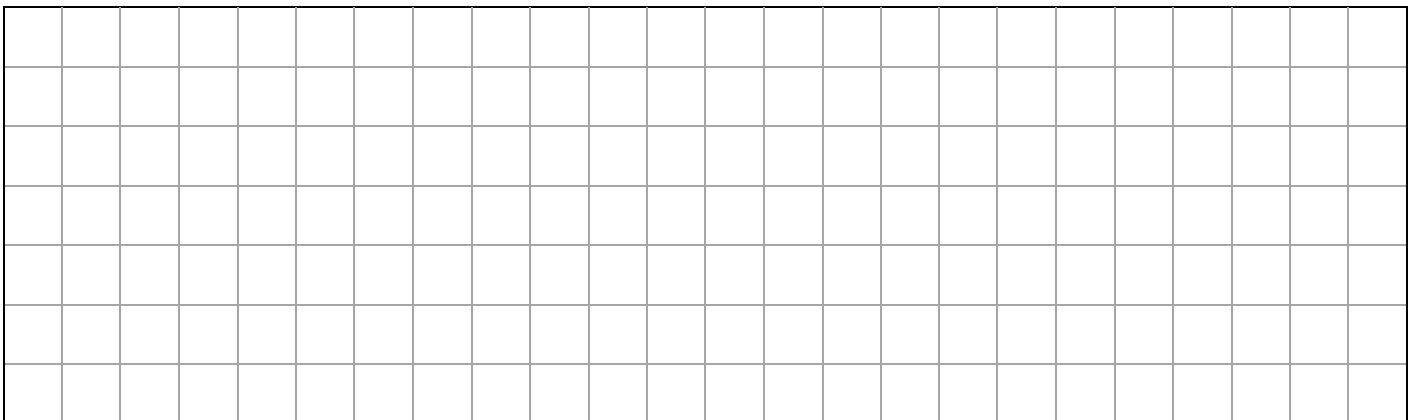
(ii) Find C, the midpoint of $[AB]$.



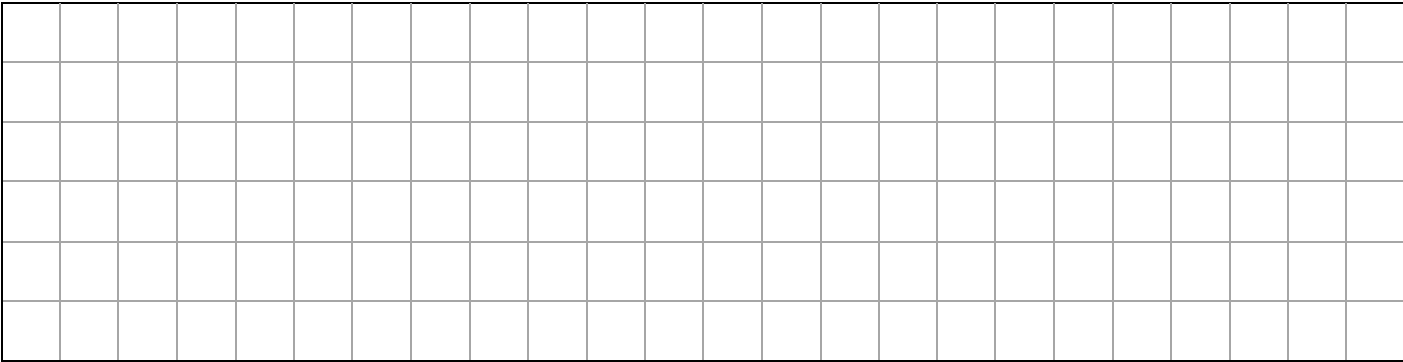
(iii) Find the slope of the line AB.



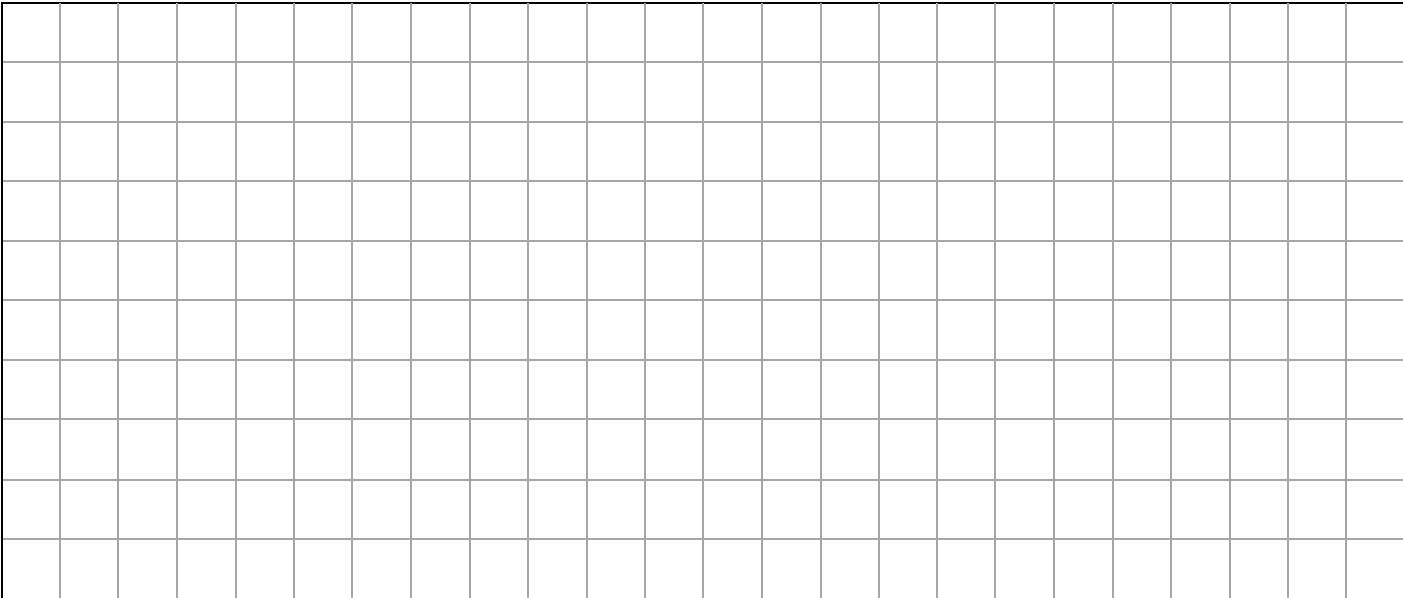
(iv) Is the line $2x = 4 - 3y$ parallel to AB? Explain your answer.



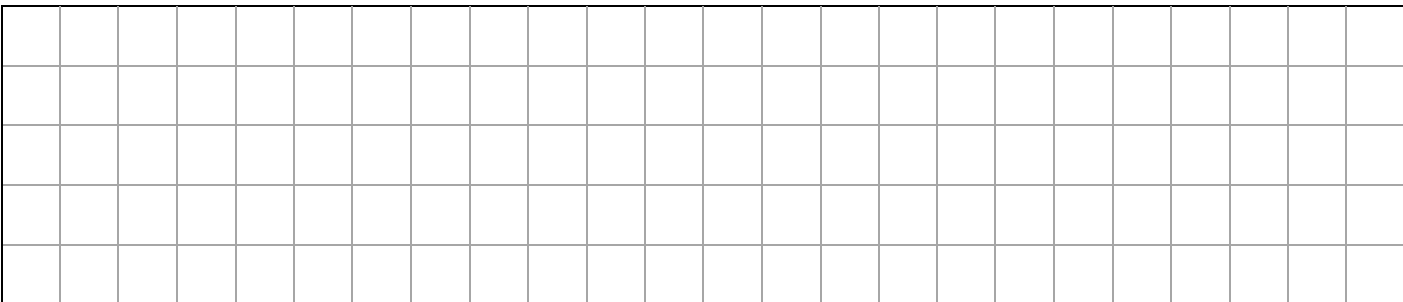
(v) Find the equation of the line AB.



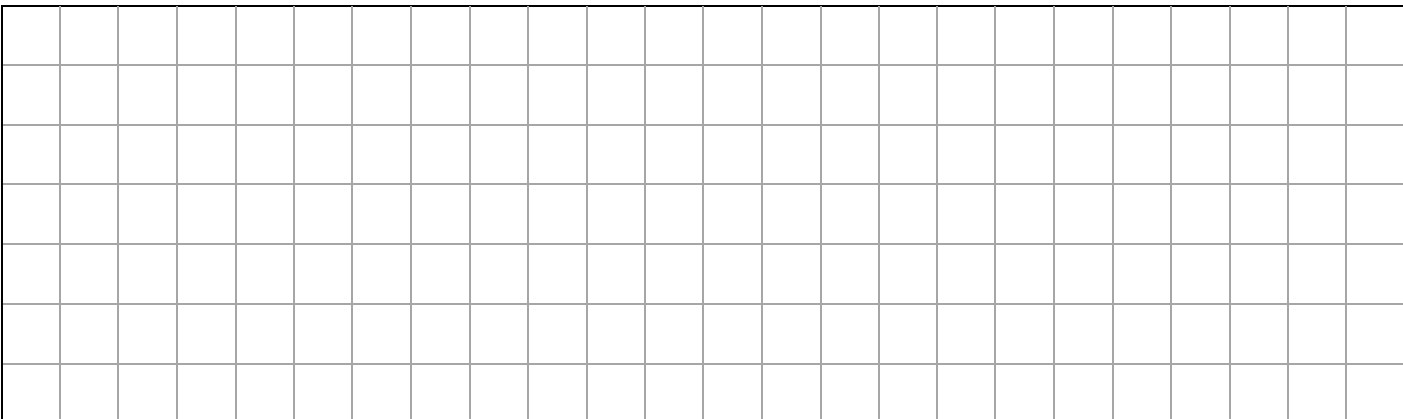
(vi) The line k is perpendicular to AB and passes through C . Find the equation of k .



(vii) D is the point $(3,5)$. Show that $D \in k$remember the \in symbol means 'is an element of'. This is another way of asking you to show the point D is on the line k .



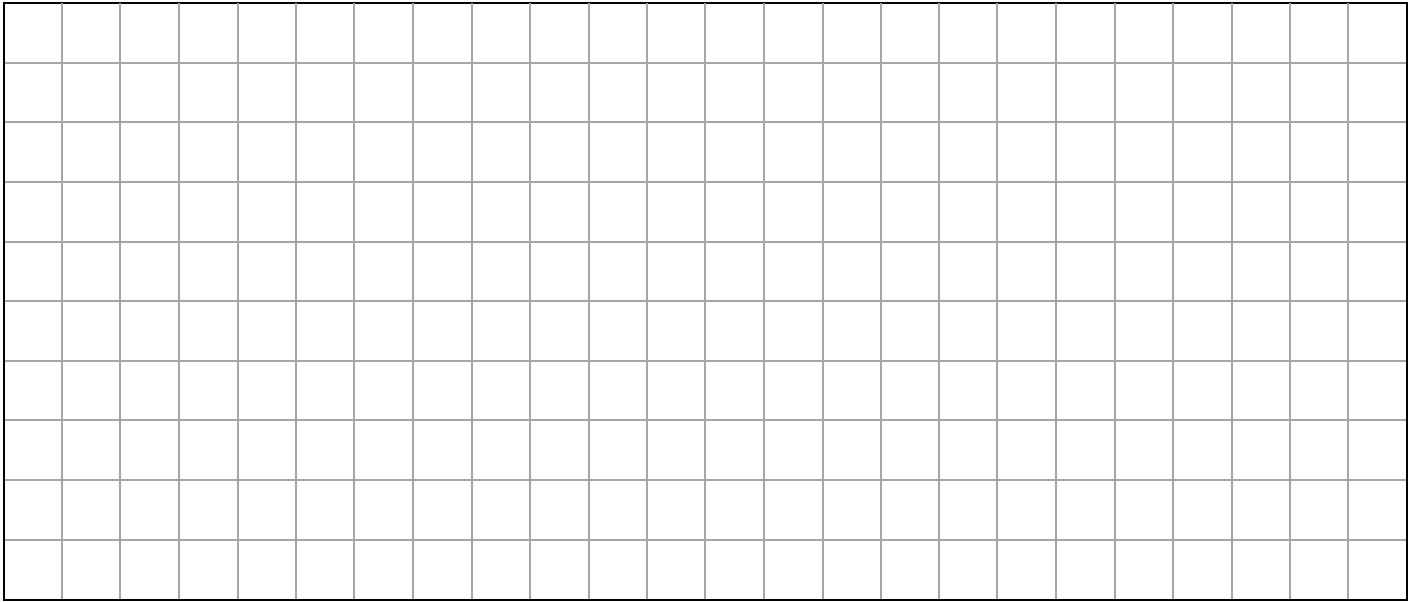
(viii) Find the area of the triangle ABD .



Main Set

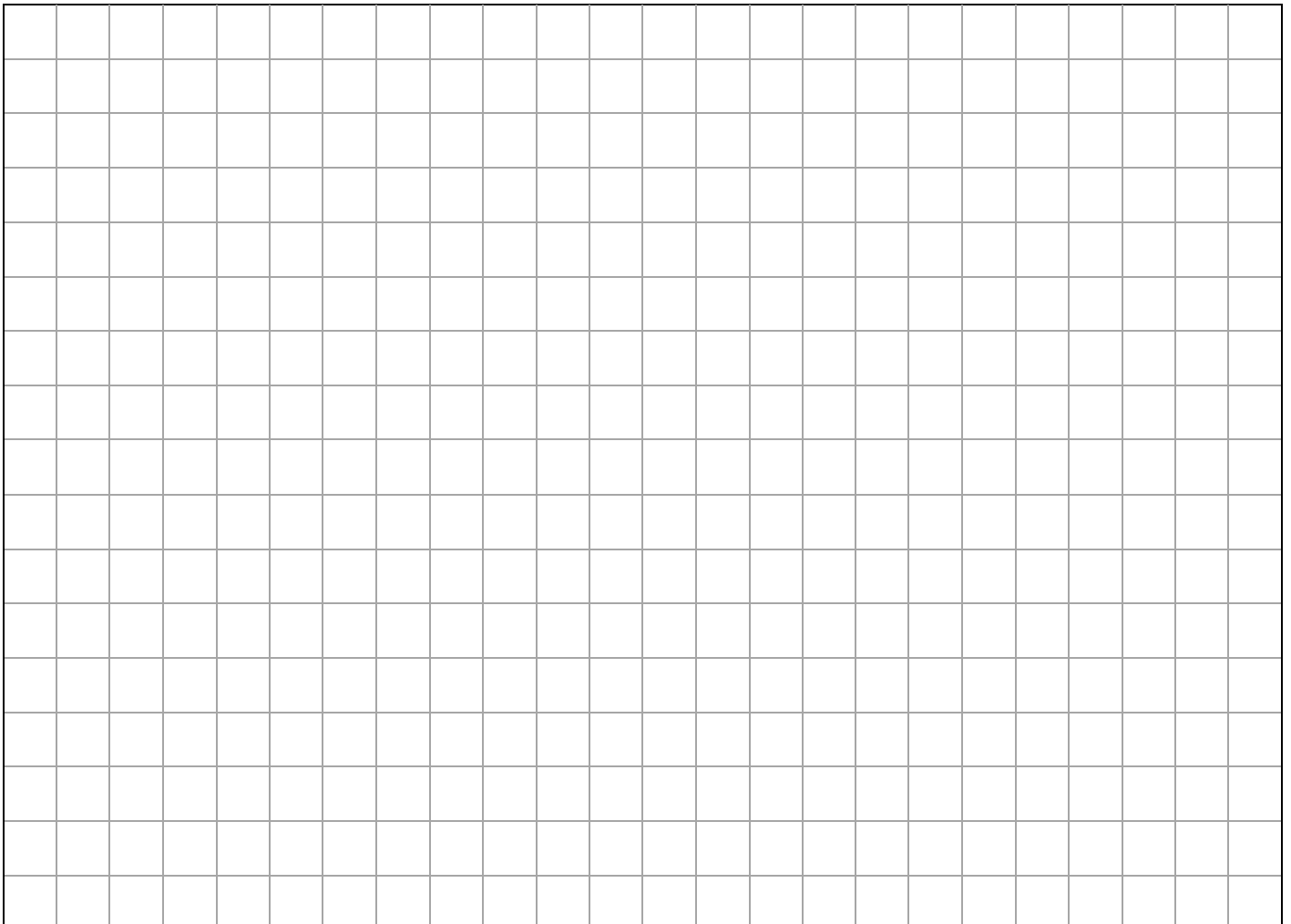
Question 2

Find the equation of the line through the point $(1, 0)$ that also passes through the point of intersection of the lines $2x - y + 6 = 0$ and $10x + 3y - 2 = 0$



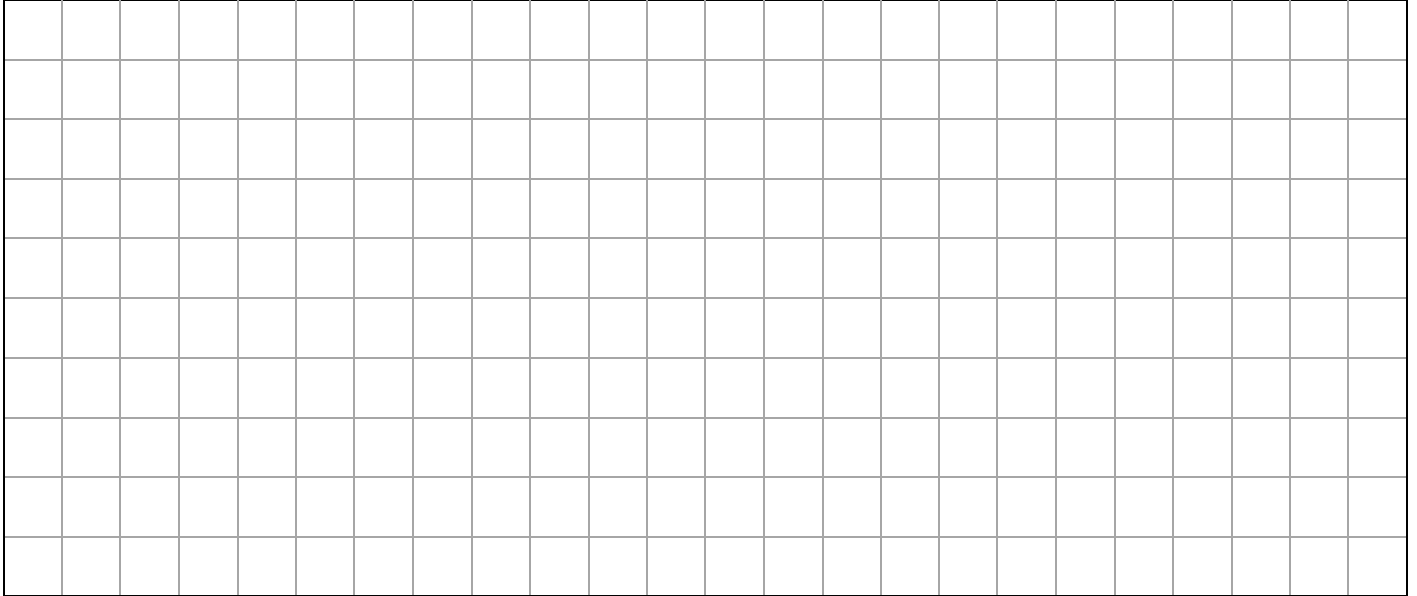
Question 3

Find the equations of the two lines that pass through the point $(6, 1)$ and make an angle of 45° with the line $x + 2y = 0$



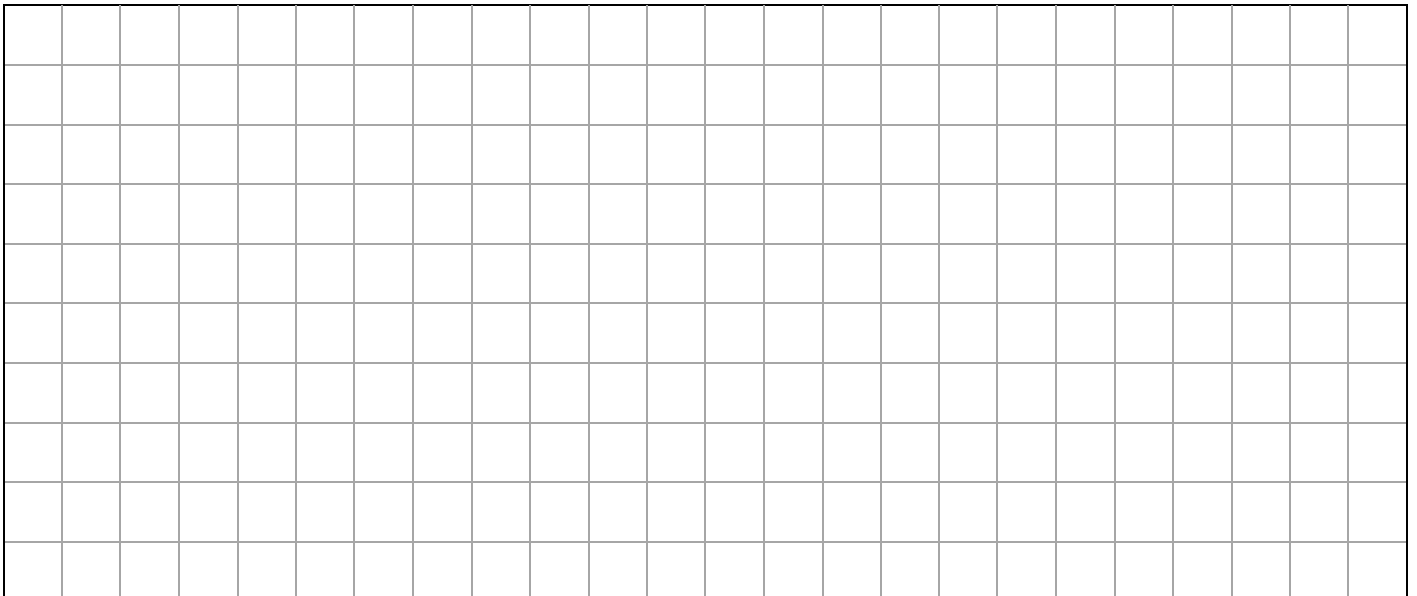
Question 4

Find the area of the triangle with vertices $(1, 1)$, $(8, -5)$ and $(5, -2)$



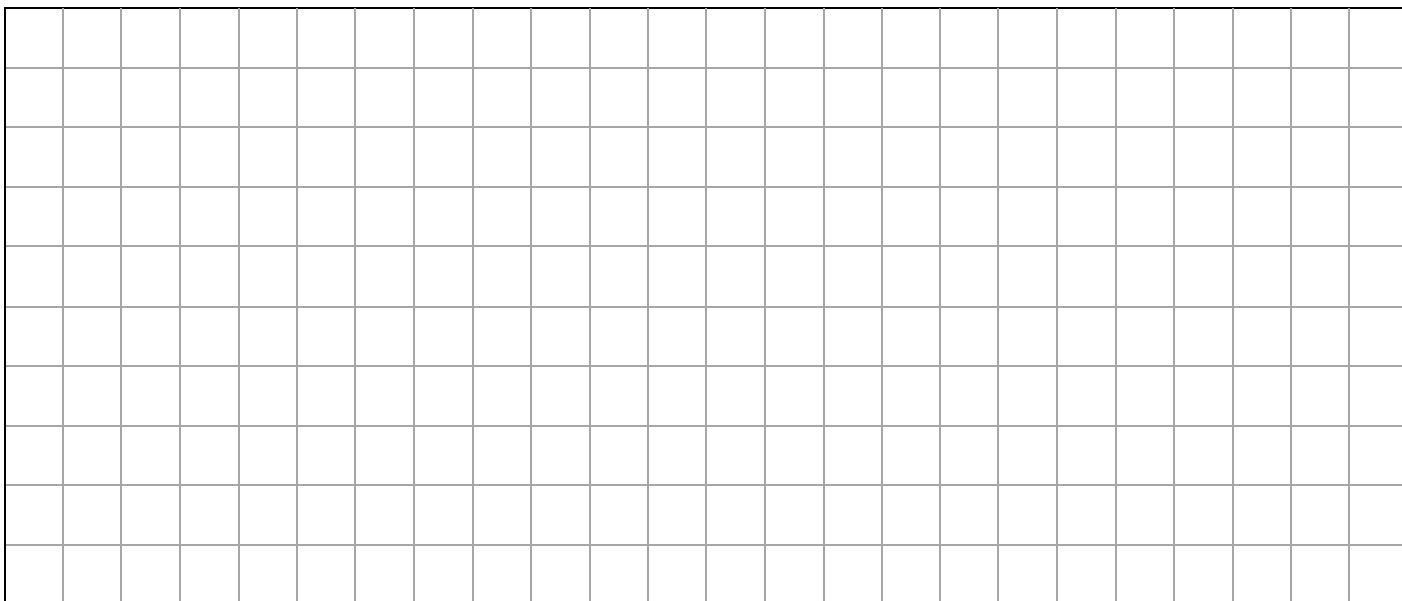
Question 5

The line $L_1: 3x - 2y + 7 = 0$ and the line $L_2: 5x + y + 3 = 0$ intersect at point p . Find the equation of the line through p that is PERPENDICULAR to L_2 .



Question 6

The line K has positive slope and passes through the point $p(2, -9)$. K intersects the x-axis at q and the y-axis at r and $pq : pr = 3 : 1$. Find the co-ordinates of q and the co-ordinates of r.



Question 7

Show that the line containing the points $(3, -6)$ and $(-7, 12)$ is perpendicular to the line $5x - 9y + 6 = 0$

