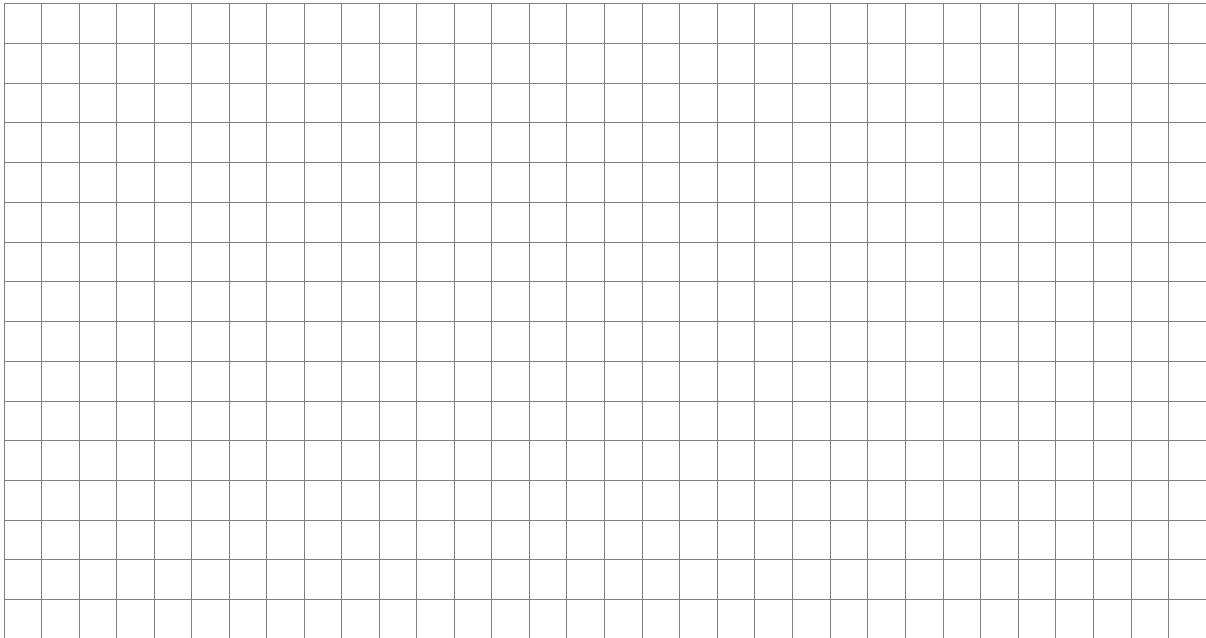


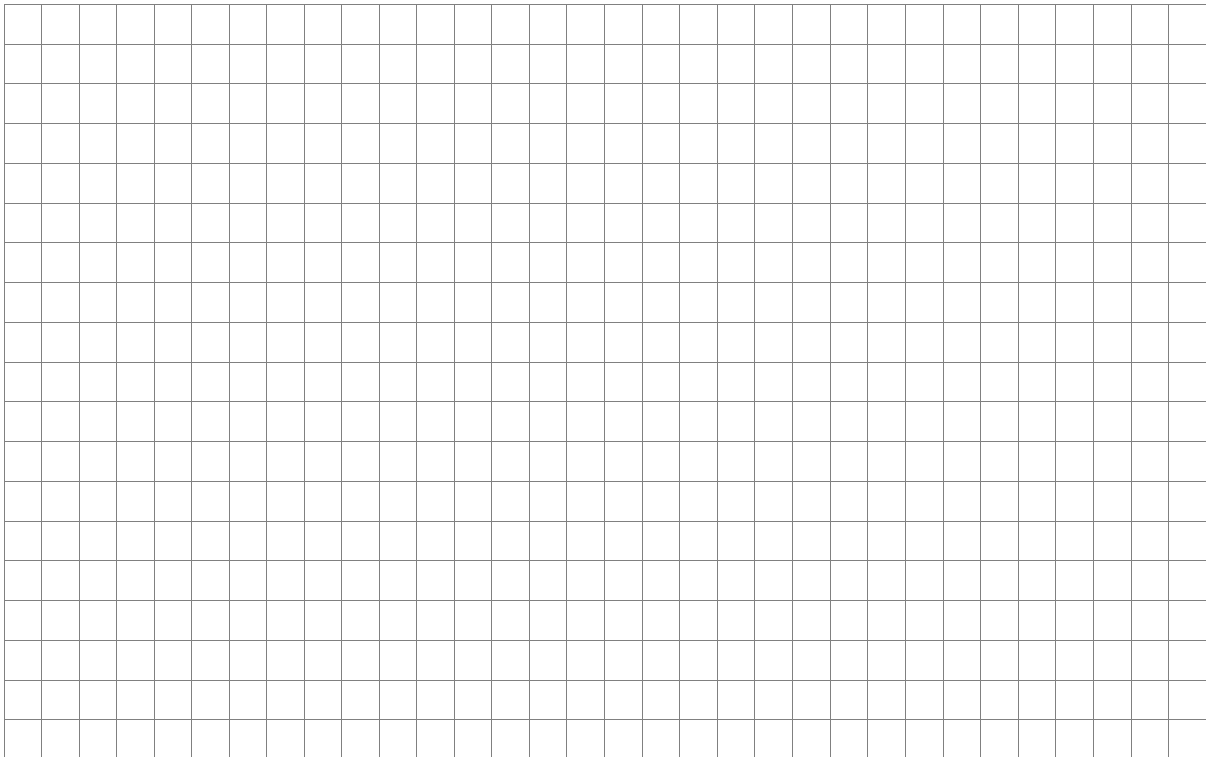
**Question**

**(30 marks)**

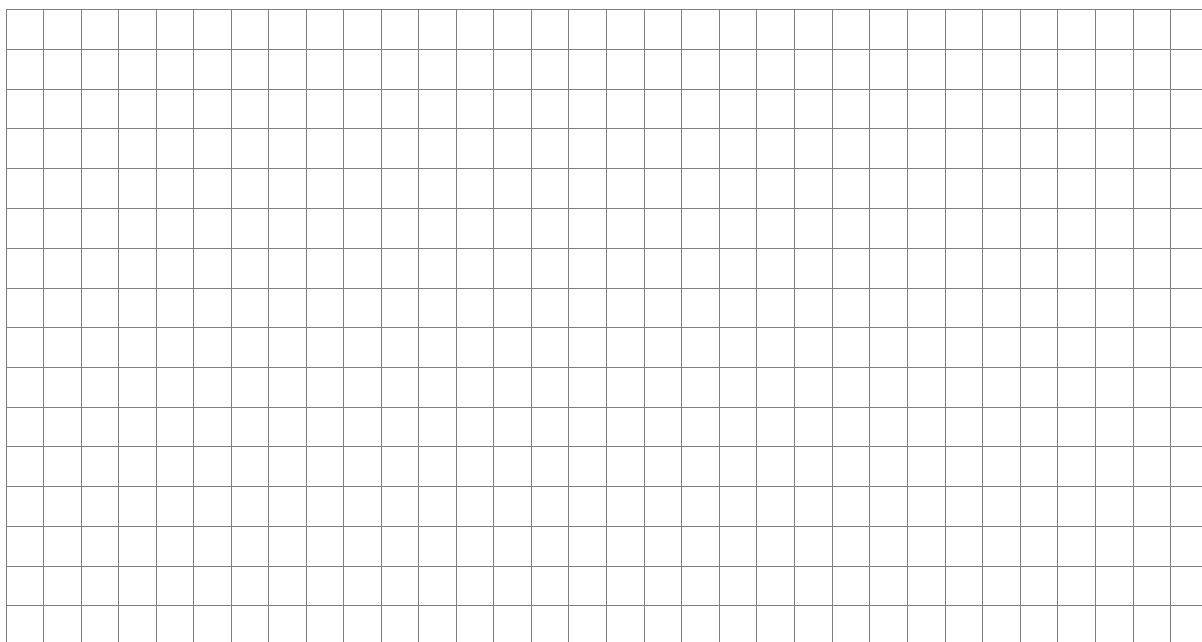
- (a)** A triangle has vertices  $(-1,4)$ ,  $(3,2)$  and  $(5,3)$ . Find the area of the triangle.



- (b)** **(i)** Find the coordinates of point W, the point of intersection, of the line  $l: 2x - 3y + 1 = 0$  and the line that passes through the points  $S(7, -6)$  and  $T(-3,2)$ .



- (ii) The point  $W$  divides the line segment  $[ST]$  in the ratio  $a:b$ . Determine the value of  $a$  and  $b$  where  $a, b \in \mathbb{Z}$ .



- (c) The line  $l: 2x - 3y + 1 = 0$  intersects a line with slope  $m$  forming an acute angle of  $45^\circ$ . Find two possible values for  $m$ .

