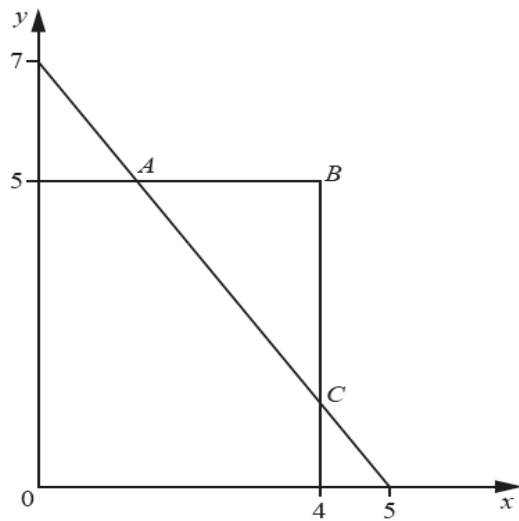


# inequalities

Qno1:

5



In the diagram, the equation of the line  $AC$  is  $7x + 5y = 35$ .

(a) Write down the three inequalities that define the region **inside** triangle  $ABC$ .

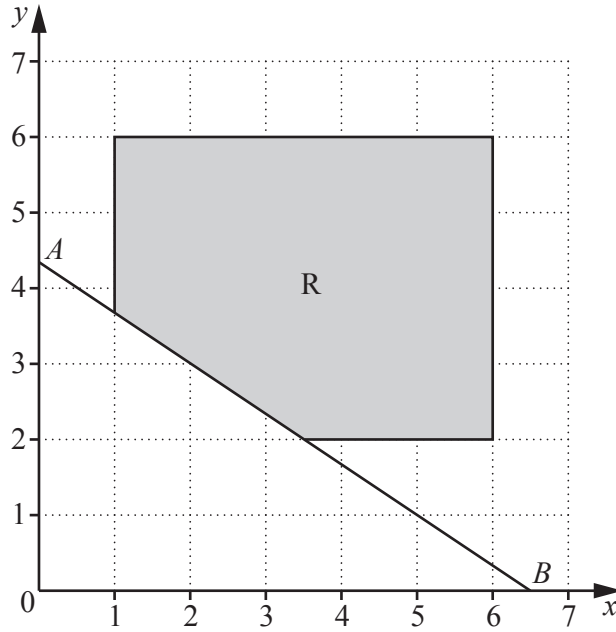
Answer .....

.....

..... [2]

(b) The line  $y = kx$ , where  $k$  is an integer, passes through triangle  $ABC$ .

Find the greatest possible value of  $k$ .



In the diagram, the line  $3y + 2x = 13$  meets the axes at  $A$  and  $B$ .

(a) Find the coordinates of  $A$ .

*Answer* (....., .....) [1]

(b) The shaded region  $R$  is defined by five inequalities.  
Two of these are  $x \leq 6$  and  $y \leq 6$ .

Write down the other three inequalities.

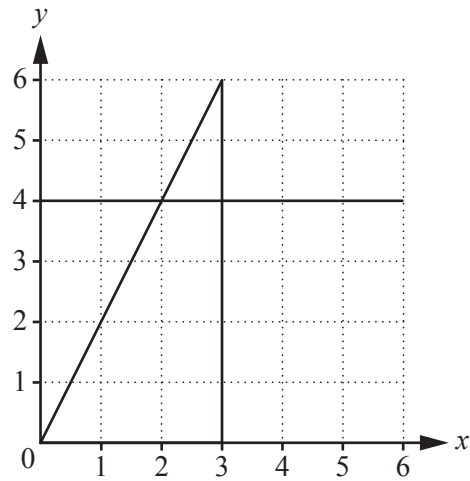
*Answer* .....  
.....  
..... [2]

(c) The point  $P$  is in the shaded region  $R$ .

Given that  $AP$  is as large as possible, write down the coordinates of  $P$ .

*Answer* (....., .....) [1]

(d)



(i) Draw the graph of  $x + 2y = 5$ .

[2]

(ii) Shade the region defined by these inequalities and label it R.

$$x \leq 3 \quad y \leq 4 \quad y \leq 2x \quad x + 2y \geq 5$$

[1]