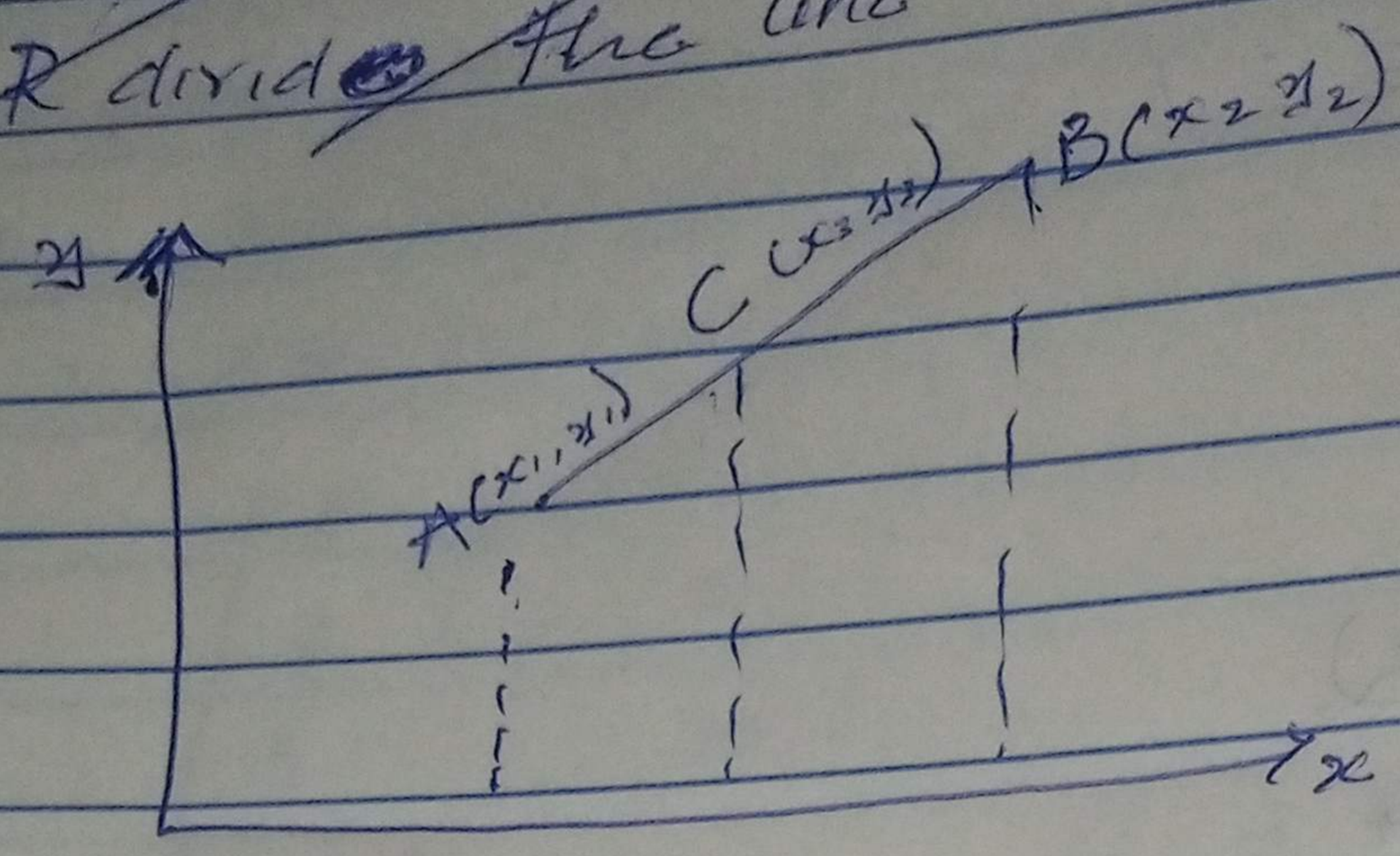


ISAAC SHER GRACE  
19/24G08/004

Let ...

R divides the line



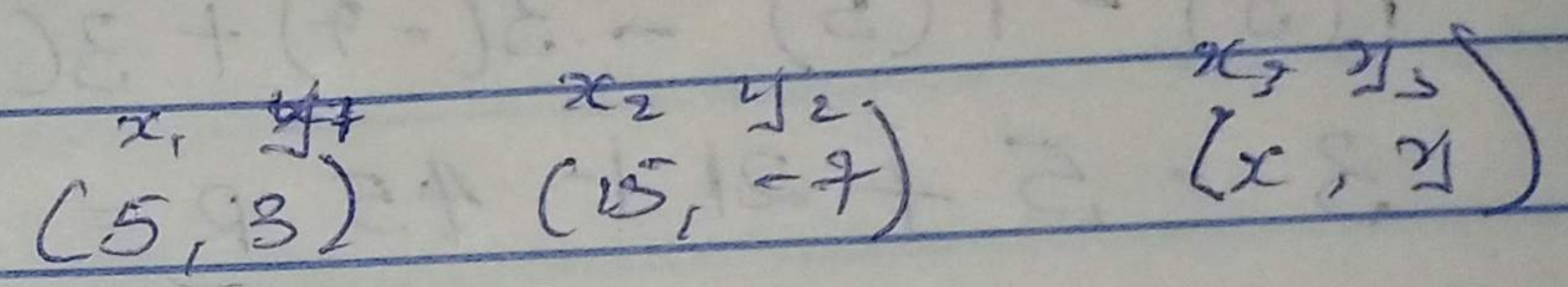
In the diagram above C divides the line

AB externally in the ratio 3:1 a point  
 $A(5, 3)$   $B(15, -7)$   $C(x_3, y_3)$

Then from the diagram

$$AC : CB = 3 : 1$$

$$\frac{AC}{CB} = \frac{3}{1}$$



$$1(AC) = 3(CB)$$

But  $AC = x_3 - x_1$

$$CB = x_2 - x_3$$

$$1(x - x_1) = 3(x_2 - x) = 0$$

$$1(x - 5) = 3(15 - x) = 0$$

$$x - 5 = 45 + 3x = 0$$

$$x - 50 + 3x = 0$$

$$4x = 50$$

$$x = 12.5$$

$$x = 1x_1 + 3x_2$$

$$\frac{1}{1+3}$$

$$x = 1(5) + 3(15)$$

$$= 5 + 45$$

$$\frac{4}{4}$$

$$x = 12.5$$

But  $AC = y_3 - y_1$

$$CB = y_2 - y_3$$

$$1(y - y_1) = 3(y_2 - y) = 0$$

$$1(y - 3) = 3(-7 - y) = 0$$

$$y - 3 + 21 + 3y = 0$$

$$4y = 18$$

$$y = 4.5$$

$$\therefore \frac{MB}{L} = \frac{C}{L}$$

$$\frac{50}{1}$$