Two people have an appointment between 15 and 16 hours, on the specific place, with the obligation to wait 20 minutes ($\frac{1}{3}$ of hour).

Find the probability of the meeting if the arrival of each person is equally possible at any time (between 15 and 16)

$x \rightarrow$ moment of arrival the first person

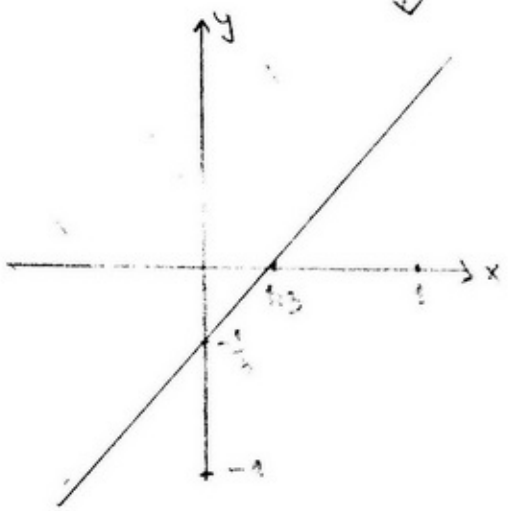
$y \rightarrow$ moment of arrival the second person

These two will meet, if:

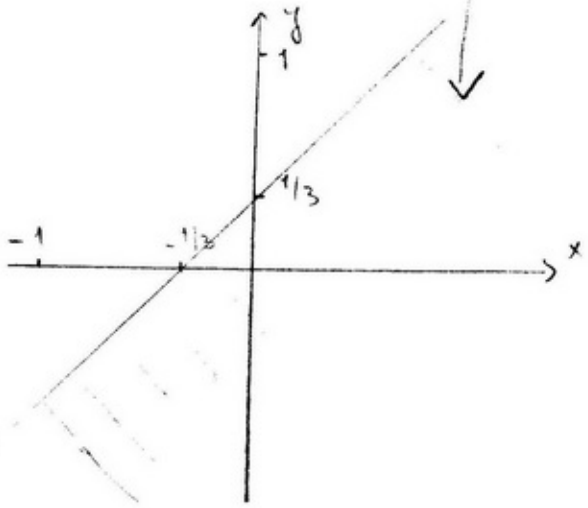
$$|x-y| \leq \frac{1}{3} \quad \text{or} \quad |y-x| \leq \frac{1}{3} \Rightarrow -\frac{1}{3} \leq y-x \leq \frac{1}{3}$$

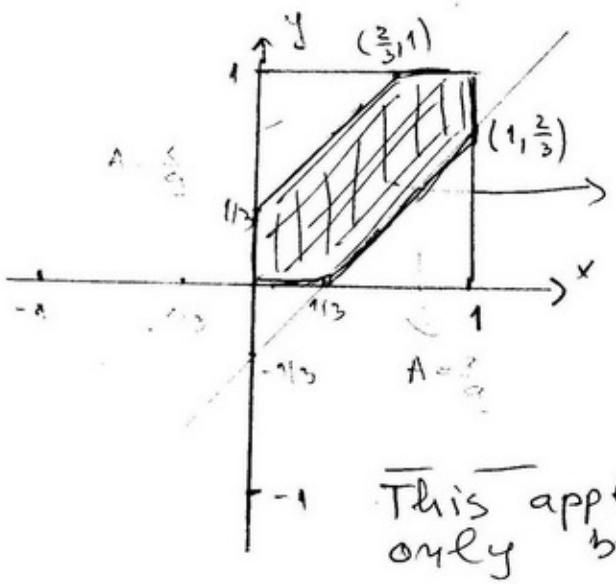
$$\boxed{x-\frac{1}{3} \leq y \leq x+\frac{1}{3}}$$

$y = x - \frac{1}{3}$ $\quad y \geq x - \frac{1}{3}$



$y = x + \frac{1}{3}$ $\quad y \leq x + \frac{1}{3}$





Area is $1 - \frac{4}{9} = \frac{5}{9}$

Probability is:

$$P = \frac{5}{9} \approx 0,56$$

This applies to any other hour, not only between 15 and 16...