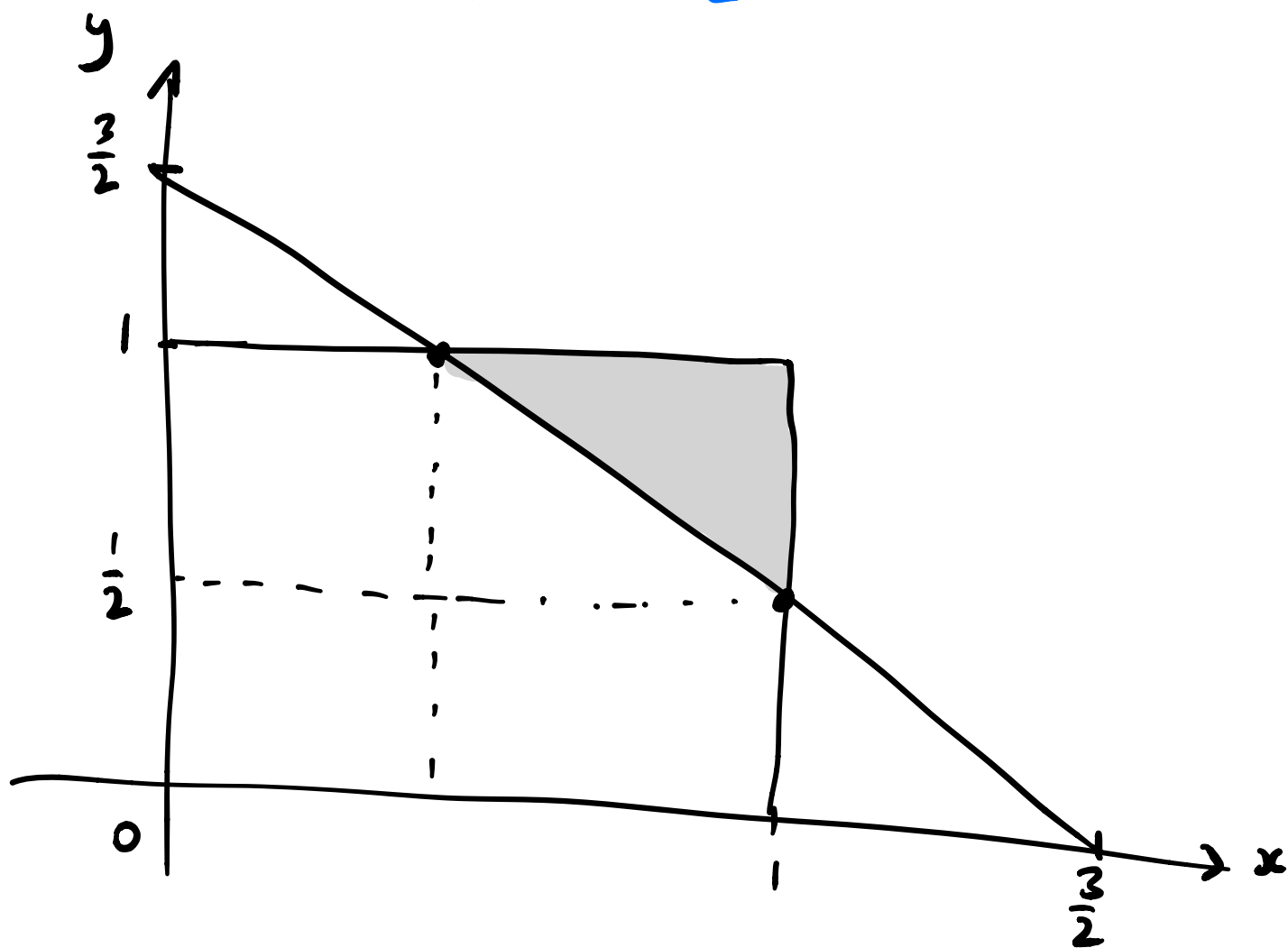


$x$  and  $y$  are chosen s.t.

$$0 < x, y < 1$$

What is the probability that

$$x + y > \frac{3}{2} ?$$



$$x + y = \frac{3}{2}$$

$x$ -int :  $y = 0 \Rightarrow x = \frac{3}{2}$

$y$ -int :  $x = 0 \Rightarrow y = \frac{3}{2}$

Where does the line  $x+y = \frac{3}{2}$  intersect  
with the lines  $x=1$  &  $y=1$ ?

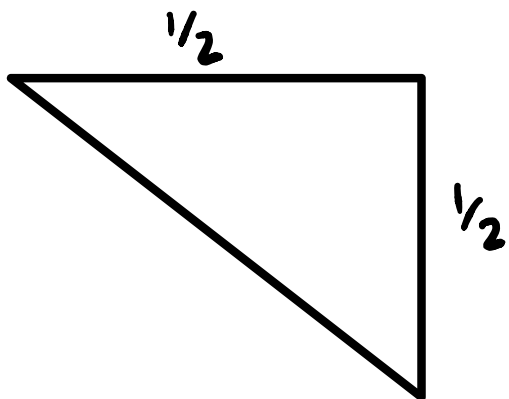
$$x=1 \Rightarrow 1+y = \frac{3}{2}$$

$$\Rightarrow y = \frac{1}{2}$$

$$y=1 \Rightarrow x+1 = \frac{3}{2}$$

$$\Rightarrow x = \frac{1}{2}$$

In the shaded region,  $x+y > \frac{3}{2}$  and  
 $0 < x, y < 1$ . So the required  
probability is the ratio of the area  
of the shaded region to the area  
of the whole square (1)



$$\text{Probability} = \text{Area}$$

$$= \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$$

$$= \frac{1}{8}$$