

To find this probability we have to take integral (corresponding to normal distribution)

$$1/(s \sqrt{2 \pi}) \exp (-(x-m)^2/(2s^2))$$

where  $s=1$  is standard deviation and  $m=3.5$  is mean and  $x$  is values of length in limits from 2 to 4.5 we can do it numerically only. So, the value of this integral is

**0.7745**

That is the probability we were looking for.