Example: Let X denote the number of girls born in 4 independent births. Notice X takes on 5 possible values: 0, 1, 2, 3, 4.

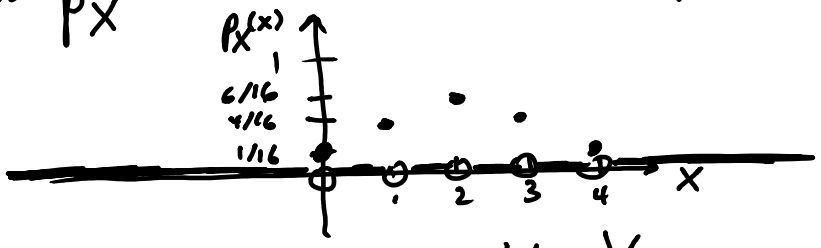
16 possible outcomes.

1 outcome →	$X=0$	$P(X=0)=\frac{1}{16}$
4 outcomes →	$X=1$	$P(X=1)=\frac{4}{16}$
6 outcomes →	$X=2$	$P(X=2)=\frac{6}{16}$
4 outcomes →	$X=3$	$P(X=3)=\frac{4}{16}$
1 outcomes →	$X=4$	$P(X=4)=\frac{1}{16}$

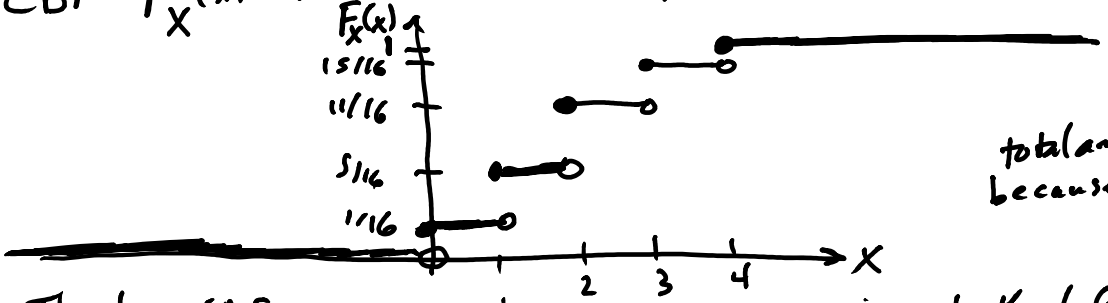
mass $p_X(x)$ of the random variable X looks like:

$P(X=x)=0$ for all other values of X

often leave off the 0 values altogether.



CDF $F_X(x)$ of random variable X



total amount of jumps is 1 because the mass must sum to 1.

Think: CDF approaches 0 as $x \to -\infty$ i.e. to the left
approaches 1 as $x \to +\infty$ i.e. to the right
has step sizes of the same heights as the mass.