Section 3.2: The Binomial Probability Distribution

binomial experiments:

① have $\underline{n}$ identical trials

② have only two possible outcomes

Yes/No   up/down   Pass/Fail   on/off

$\rightarrow$ we call one outcome a success S
and the other a failure F

③ the probability of success is equal to p
and remains the same from trial to
trial

$$P(\text{success}) = p$$
$$P(\text{failure}) = 1 - p = q$$

④ the trials are independent

⑤ we are interested in x, the number of
successes observed during the n trials

$$x = 0, 1, 2, \cdots \quad n$$

note: x is bounded, with
max and min values