1] . It's a random variable that can take only one of two values
(e.g. 0 or 1)

- Examples: A student pass or fail a specific Course

2] . Bionomial is just bernoilli repeated multiple times

- use bernoulli when #trials is only one
- use Bionomial when #trials is more than one and trials are indepent from each other

3] . They're totally unrelated (independent)

4] . Discrete: the variable can take finite # values
- Ex: # People working in a company

- Continuous: the variable can take Infinite # values
- Ex: temperature degree

5]
$$f(x) = \binom{n}{x} p^x (1-p)^{n-x}$$
$$n = 10, \quad x = 9, \quad p = 0.9$$

6] . test of idependence
- Null hypothesis: they're indepedent
- Alternative hypothesis: they're not indepedent

7] . Because covariance value depends on the scale of variables and it measures how variables vary together. You still need correlation.

8] . PDF: relation between continuos random variable and its probability
- The PDF by itself is not so useful until integrated over an area.
- CDF: Integrates from $-\infty$ to the variable of interest

- $CDF = \int_{-\infty}^{x} f(x) \, dx \longrightarrow PDF$

9] . $P < \alpha$, then reject null hypothesis

- It means "the traffic to the App is not evenly distributed accross weekdays"

10] . Assumption: successive replies are independent
- $X = 5 + 3$ what's X? reply: 9 (wrong answer)
         multiply X by 2 reply: 18 (also wrong answer)

11] • correlation ≠ causation, there may be other factors
   • Motivation. A motivated student may get higher grades
   • we can't say from correlation alone that time on platform is the
     direct cause of higher grades

12]
   • I would integrate the PDF from 5 mins to ∞ time
   • or 1 - CDF (5 mins)