Day 2 distributions

Binomial Distribution

In the experiment where there are only two out come of the result. An example getting the value 6 in ludo.

Question: What is the probability of getting 6 in ludo.

Now given the probability of getting 6 in ludo is P, if you though how many 6 you get in the game. In the game you played 50 times.

Question : Given that you played game 6 time what is the probability that you get 5 sixes. This can be found using binomial distribution function.

$P(X = k) = \binom{n}{k} p^k (1-p)^{n-k}$

lets solve this.

We can also used r function can dbinom(success, size=20, prob=.3)

Normal Distribution

$P(x) = \frac{1}{\sigma\sqrt{2\pi}} e^{-(x-\mu)^2/2\sigma^2}$

rnorm(100000,1,5),main = ““,xlab =””)

Poisson Distribution

$P\left(x\right) = \frac{e^{-\lambda}\lambda^x}{x!}$

rpois(100000,4),main = ““,xlab =” “)

Anova

```
teenage_birth <- read.csv("./data/Percentage_teen_birth.csv",header = T)
model1<-aov(value~State.group,teenage_birth)
summary(model1)
```

```
##             Df Sum Sq Mean Sq F value   Pr(>F)
## State.group  3  333.1  111.03   21.91 5.83e-09 ***
## Residuals   46  233.1    5.07
## ---
## Signif. codes:  0 ’***’ 0.001 ’**’ 0.01 ’*’ 0.05 ’.’ 0.1 ’ ’ 1
```