

9/4/22
Tuesday.

1. ~~13~~ No. of cards = 52

$$= \frac{13}{52} \times \frac{13}{51} \times \frac{13}{50}$$

$$= 0.0165$$

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no. of heart = 13
no. of spade = 13
no. of diamond = 13

2. Total percentage = 100

$$\text{action movies} = 42\% = 42/100$$

$$\text{comedy movies} = 54\% = 54/100$$

$$\text{drama movies} = 36\% = 36/100$$

$$\text{horror movies} = 12\% = 12/100$$

a) favourite is either action or drama

$$\frac{42}{100} + \frac{36}{100} = \frac{78}{100} = 0.78$$

b) favourite is either comedy or horror.

$$\frac{54}{100} + \frac{12}{100} = \frac{66}{100} = 0.66$$

3. A \Rightarrow red = 3, black = 5

B \Rightarrow white = 4, black = 7

$$P(\text{Black}/A) = 5/8, \quad P(\text{Black}/B) = 7/11$$

$$P(B/\text{Black}) = \frac{P(B) \times P(\text{Black}/B)}{P(A) \cdot P(\text{Black}/A) + P(B) \cdot P(\text{Black}/B)}$$

$$= \frac{1/2 \times 7/11}{0.630}$$

$$1/2 \times 5/8 + 1/2 \times 7/11$$

$$= \frac{7/22}{0.630} = 0.505.$$

b. $\mu = 350870$

$\sigma = 12405$

$z = 55 \Rightarrow 0.675$

Percentile = $350870 + (0.675) \times (12405)$
 $= 359243.375.$