19/04/22 Data Science

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ECE.

1) The Total Probability = $\frac{13}{52} \times \frac{13}{51} \times \frac{13}{50} =$

$= 0.0165$

2) like action = 42%.
Like comedy = 84%.
Like drama = 36%.
like horror = 12%.

a) $\frac{42}{100} + \frac{36}{100} = \frac{78}{100}$

b) $\frac{84}{100} + \frac{12}{100} = \frac{66}{1000}$

3) Bag A = 3 red & 5 black; bag B = 4 white & 7 black

$P(A) + P(B) = \frac{1}{2}$

4)

$P(B/A)$ = Prob's of black balls from bag A

$= \frac{5}{8}$

$P\left(\frac{B}{B}\right) = \frac{7}{11}$

$P(B/B)$ = Probility the black ball from bag B

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

$= \frac{1/2 \times 7/11}{1/2 \times \frac{5}{8} + \frac{1}{2} + \frac{5}{8} \frac{7}{11}}$

$= \frac{7/22}{\frac{5}{16} + \frac{7}{22}} = \frac{7/22}{0.630} = 0.505$

4) Given:

450 application in 1 hours

a) $\lambda = \frac{450}{60}$

$\lambda = 15/2$ $\boxed{x = 10}$

$$P(X = x) = \frac{e^{-15/2} \cdot (15/2)^{10}}{10}$$

$$= 0.0858$$

b) $$z = \frac{x - \mu}{\sigma}$$

$$0.675 = \frac{x - 350870}{12405}$$

$$x = 350870 + (0.675 \times 12400)$$

$$x = 359237.045$$

75th percentile = 359237.045