MATH - 120

FINAL EXAM

12/15/2021

NAME :- SUREKHA SRINIVASA

PALOMAR ID :- 01255 1187

6. Ans :- 8. Ans: Great I question did not need in-book reading because I did not need to write anything down.

9. Ans $P(\text{girl}) = 1 - 0.537$

$= 0.463$

$${}^{n}C_{x_1} \times p^{x_1} \times (1-p)^{n-x}$$

$$P(x \geq 1) = 1 - p\,(x < 1)$$

$$= 1 - p(x = 0)$$

$$= 1 - \{ {}^{5}C_0 \times 0.463^0 \times (1-0.463)^5 \}$$

$$= 1 - \{ 1 \times 1 \times (0.537)^5 \}$$

$$= 1 - (0.537)^5 = 0.955$$

10. Ans $\mu = 0 + 0.029 + 0.202 + 0.666 + 1.144 + 1.09 + 0.648 + 0.203 + 0.024$

$= 4.006$

P $E(x) = 0 + 0.029 + 0.404 + 1.998 + 4.576 + 5.45 + 3.888 + 1.421 + 0.192$

$= 17.958$

$\sigma^2 = 17.958 - 16.048036$

$= 1.909964$

$\sigma = 1.382014471 7$

11. Ans $n = 5$

$\lambda = 0.2$

Probability of no correct answer

$= P(X=0)$

$= {}^5C_0 \times (0.2)^0 \times (1-0.2)^5$

$= 1 \times 1 \times (0.8)^5$

$= 0.32768$

13. Ans $P\left(\frac{81-100}{20} < z < \frac{119-100}{20}\right)$

$P\left(\frac{-19}{20} \leq z \leq \frac{19}{20}\right)$

$P(-0.95 < z \leq 0.95)$

$P(z < 0.95) - P(z < -0.95)$

$0.829943874 - 0.171056126$

$= 0.6579$

14. Ans Nothing needed to be written.

15. Ans $z = \frac{\hat{p} - 0.5}{\sqrt{\frac{0.5 \times 0.5}{265}}}$

$\hat{p} = \frac{117}{265} = 0.441509$

$z = \frac{-0.058490566}{0.030714758}$

$= -1.90431$

Solved rest of it finding itself.