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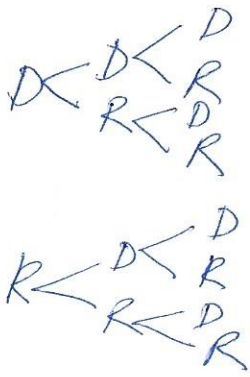
MATH 1342
Statistics
Mr. Bailey

Date- 11-13-18

Diet
Regular

* (1)



From class example

$\frac{3}{12} \cdot \frac{2}{11} \cdot \frac{9}{10}$

$\frac{3}{12} \cdot \frac{9}{11} \cdot \frac{2}{10} = .1227$

$\frac{9}{12} \cdot \frac{3}{11} \cdot \frac{2}{10}$

$P(\text{two diet}) = \frac{3C_2 \cdot 9C_1}{12C_3}$

$= \frac{27}{220} = \boxed{.1227}$

$P(\text{one diet}) = \frac{3C_1 \cdot 9C_2}{12C_3} = \frac{108}{220} = \boxed{.491}$

(2)

a) $(0.17)(0.484) = \boxed{0.08228}$

(b) $0.17 + 0.484 - 0.08228 = \boxed{0.572}$

(c) $P(\text{Betting and male}) = .106$

← from previous page

Betting and gender are not independent.

(3) $_{21}C_9 = \frac{21!}{(21-9)!\,9!}$

$= \frac{21!}{12!\,9!}$

$= \boxed{293,930}$

(4) $E(\bar{x}) = \Sigma(x\,p(x))$

x	$p(x)$
\$200	.999544
\$-249800	.000456

$E(\bar{x}) = \$200(.999544) - 249800(.000456)$

$= \$\boxed{86}$

(5) (a) $P(x=3)$

$${}_{20}C_3 (.05)^3 (0.95)^{17}$$

$$= \boxed{0.0596}$$

(b) $P(x=0) + P(x=1) + P(x=2) + P(x=3)$

$P(x \leq 3) = .9842$

$P(x=0) = {}_{20}C_0 (.05)^0 (.95)^{20}$

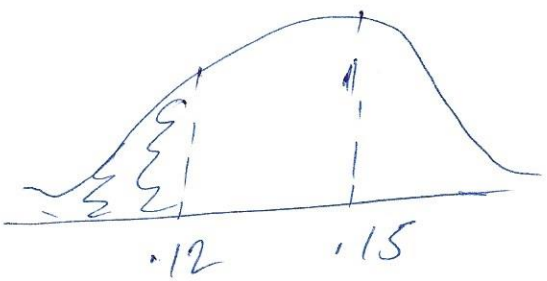
$P(x=1) = {}_{20}C_1 (.05)^1 (.95)^{19}$

$P(x=2) = {}_{20}C_2 (.05)^2 (.95)^{18}$

(c) $P(x>3) = 1 - P(x \leq 3)$

$= 1 - .9842$

$= \boxed{.0158}$



from Last example 1 11108/18

$\mu_{\hat{p}} = .15$

$\sigma_{\hat{p}} = .0325$

$$z = \frac{.12 - .15}{0.0325}$$

$$= -.92$$

$P(z < -.92) = .1788$

$P(p < .12) = .1788$

(b) $120 = n \qquad x = 26$

$$\hat{p} = \frac{26}{120} = .217$$