AP STATS
Chapter 6 Review Class Work

Name_____
Date_____Hour_____

1) The probability distribution below is for the random variable X = number of mice caught in traps during a single night in small apartment building.

X	0	1	2	3	4	5
$P(X)$	0.12	0.20	0.31	0.14	0.16	0.07

a) Describe $P(X \geq 2)$ in words and find its value.

Probability that 2 or more mice get caught in traps during a single night...

$P(X \geq 2) = P(2) + P(3) + P(4) + P(5) = .68$

b) Express the event "trapping at least one mouse" in terms of X and find its probability.

$P(X \geq 1) = 1 - P(0) = .88$

2) Joe the barber charges $32 for a shave and haircut and $20 for just a haircut. Based on experience, he determines that the probability that a randomly selected customer comes in for a shave and haircut is 0.85, the rest of his customers come in for just a haircut. Let J = what Joe charges a randomly-selected customer.

a) Give the probability distribution for J.

J	20	32
$P(J)$	0.15	0.85

b) Find and interpret the mean of J, μ_J. (SHOW YOUR WORK!)

$$\mu_J = 20(0.15) + 32(0.85) = \$30.20$$

Over the long run, Joe can expect to make $30.20 per customer

c) Find and interpret the standard deviation of J, σ_J. (SHOW YOUR WORK!)

$$\sigma_J = \sqrt{\sum (x_i - \mu_x)^2 p_i}$$

$$\sigma_J = \sqrt{(20-30.20)^2(.15) + (32-30.20)^2(.85)} = \$4.28$$

On average, the cost per customer differs or varies from mean $4.28.