This is an open book quiz. You are allowed to use your text and written
notes. Other books, laptops, PDA's and text messaging devices are
prohibited. Calculators are permitted. Give complete explanations
to receive full credit. There are [30] total points.

_____/30

Binomial Random Variables.

The Clearfield Crystal Company knows from experience that 1/3 of its goblets have cosmetic
flaws and must be classified as "seconds." Let X be the number of seconds among five randomly
selected goblets.

a. [10] Among the five randomly selected goblets, how likely is it that exactly three are seconds?

b. [10] Among the five randomly selected goblets, what is the probability that at least three
are seconds?

c. [10] If flawless goblets are worth $21.00 each and seconds are worth $9.00 each, on average
what are five randomly selected goblets worth?