

Review for Quiz **6B**

X	0	1	2	3	4
P(X)	0.5	0.1	0.2	0.1	0.1

1. Calculate the mean value of x .
2. Interpret the mean value of x in the context of the problem (quiz will tell you the topic of the distribution)
3. What is the probability that a random x exceeds the mean number of x ?
4. Calculate the standard deviation of x .
5. Multiply each x by 4 and find the *mean and standard deviation* of the new distribution.

The distribution of x is approximately normal with a mean of 20 and a standard deviation of 1.3.

6. $P(x > 22)$
7. Where is the 85th percentile?
8. What is the probability that x is EXACTLY 21 minutes. Explain.

A game is played where you roll a die. You win \$5 if you roll a 2 or 3. You win \$2 if you roll a 1. Any other roll you pay \$1.

9. What is the expected value of this game if you play over a long period of time?
10. Is this a fair game? Explain.

11. $P(x) = .35$, you are doing 5 trials.

(a) Does X describe a binomial setting or a geometric setting? Justify your answer.

(b) Compute the mean and standard deviation x .

(c) Find the probability that x occurs at least 3 times.

Now let's suppose we keep trying until x occurs.

(d) Find the probability that x occurs on the fourth attempt.

(e) Find the probability that x occurs after the third attempt.