MAT 223, Discussion Questions 10.21

1. What are the properties of the binomial distribution?

Success or failure fixed # of trials fixed probability

2. What are some situations we can use the binomial distribution to model? Give at least three.

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answers will wang

3. The formula for the binomial distribution is given by $P(X=x) = \binom{n}{x} p^x (1-p)^{n-x}$. What do p, n, and x stand for?

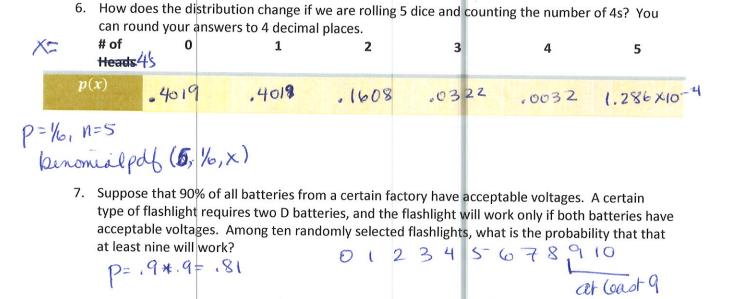
p is the probability of success on each mail
n is the # of mails X is the # 4 Successes

4. For the scenario in which we flip 5 fair coins and count the number of heads, state the probability distribution in the table below.

X= # of Heads 1/32 7/32 5/16 5/16 7/32 •03125 •15625 •3125 ,3125 .15625 P=1/2, N=5, benomial pdf (5, Va, X)

5. Give the cumulative distribution for the above scenario in the table below.

of 5 X= Heads p(x) /32 3/16 1/2 03125 01875 .5 P=1/2, n=5 binomical cdf (5, 1/2, x) 1.00



1-binomialed (10, -81,8) = .406756

or binomialed (10, .81, 9) + binomialed (10, .81, 10)

1-binomialed (10, .81, 9) + binomialed (10, .81, 10)

8. In light of the argument at http://profkeithdevlin.org/2011/11/20/what-is-algebra/, what aspects of our course so far are "algebra" and which are more like "arithmetic"? Do you think we have a misperception about algebra or that the author of the article is just wrong?