Final exam Fall 2008

12. A recent study on teenage pregnancy indicates that 4% of the female population will get pregnant sometime in their teenage years. The study stated that teenage pregnancies occur independently of one another. Suppose 15 teenage women were randomly selected. What is the probability that between 3 and 5 inclusive of the sampled women will get pregnant sometime during their teenage years?

(a) 0.001
(b) 0.105
(c) 0.018
(d) 0.099
(e) * 0.020

Final exam Fall 2010

5. In a casino game, you have probability 0.1 of winning. If you play the game 20 times (independently), what is the probability that you win 2 times or fewer?

(a) 0.20
(b) 0.30
(c) 0.05
(d) * 0.65
(e) 0.45

Final exam Fall 2011

33. A fair coin is tossed 400 times. Find the standard deviation of the number of heads that will be obtained.

(a) 30
(b) 10
(c) 20
(d) 50
(e) 40

Ans: Number of heads has a Bin($n = 400$, $p = 0.50$) distribution and so the variance = $np(1-p) = 400 \times 0.5 \times (1-0.5) = 100$ and so the standard deviation is 10.