MATH 5010 – Quiz 9

Name:

Date:

4.22a Suppose that two teams play a series of games that ends when one of them has won 4 games. Suppose that each game played is, independently, won by team A with probability 2/5. Let X be the number of games played. Find the ~~variance of X~~. pmf.

$$p(x) = \begin{cases} \binom{x-1}{3}\left(\frac{2}{5}\right)^4\left(\frac{3}{5}\right)^{x-4} + \binom{x-1}{3}\left(\frac{3}{5}\right)^4\left(\frac{2}{5}\right)^{x-4} & x = 4,5,6,7, \\ 0 & \text{o/w.} \end{cases}$$