## Quiz 5

Answer the questions. Be sure to justify your answer do not simply write the answer down. Use complete sentences where appropriate and scrap paper if needed (on the desk at the front of class, scrap paper must be turned in but will not be graded for work). Circle or box your answer where appropriate. You may ask questions about the wording of a question or to clarify the instructions.

1. A certain fast food chain is doing a promotion where whenever you buy a hamburger you get one of three stickers, and if you collect all three stickers you win free hamburgers for a year. Suppose the three stickers are called A, B, C and the probability of a certain sticker being A, B, or C is  $p_1 = .12$ ,  $p_2 = .85$ , and  $p_3 = .03$ , respectively. If I buy 100 hamburgers and have 100 stickers, what is the probability that 10 of them are A and 5 of them are C stickers? (10 pts.)

**2.** Let X be a continuous random variable with p.d.f. f(x) = |x|, -1 < x < 1. What is the p.d.f. g(y) of  $Y = X^2$ ? Be sure to state the support of g. (10 pts.)