

Name \_\_\_\_\_ Discrete II, Quiz 2

*Please do not simplify answers!*

1) A hand in hearts contains 13 random cards from a standard deck of cards. How many hands contain all four queens?

2) How many integer solutions are there to

$$x_1 + x_2 + x_3 + x_4 + x_5 + x_6 = 15$$

where  $x_i \geq 0$  and  $x_3 \geq 4$ ?

3) Alice will draw 7 cards out of a standard deck of cards. What is the probability that in her hand she has both a four of a kind and a three of a kind?