

Quiz 5

Math 105

Summer 2020

You have 30 minutes to complete this quiz (**this includes the time it takes to scan and upload it**). You may not use a calculator, your notes, the textbook, or any other resources. Write your solutions on a separate sheet of paper, and when you're finished, first check your work if there is time remaining, then scan the quiz and upload it to Canvas. If you have a question, don't hesitate to ask — I just may not be able to answer it.

1. (8 points) A room contains six different dogs: a boxer, a bloodhound, a great dane, a mastiff, a ridgeback, and a lab. If you pick three and line them up, what is the probability that the line-up will be exactly boxer–bloodhound–great dane (in that order)? Show all your work.

2. (8 points) You enter a free raffle. You have a $\frac{1}{1000}$ chance to win \$1000 — otherwise you win nothing. What is the expected value of entering the raffle? Show all your work.

3. (8 points) You draw two cards from a randomly-shuffled 52-card deck. What is the probability that the second one is the ace of spades, given that the first one is the 2 of spades? Show all your work.