

Math 10B with Professor Stankova

Quiz 5; Tuesday, 2/20/2018

Section #211; Time: 11 AM

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Name: \_\_\_\_\_

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Circle True or False or leave blank. (1 point for correct answer,  $-1$  for incorrect answer, 0 if left blank)

1. True    False    If  $A, B$  are mutual exclusive events that are independent, then  $P(A) = 0$  or  $P(B) = 0$ .
2. True    False    If  $A, B$  are independent events and  $B, C$  are independent, then  $A, C$  are independent.

Show your work and justify your answers. Please circle or box your final answer.

3. (10 points) (a) (5 points) When rolling a fair 6-sided die, are the events  $A$  that the number rolled is greater than or equal to 3, and  $B$  that the number rolled is odd, independent?

- (b) (5 points) There are 10 red and 10 blue balls in a bag. Someone randomly picks out a ball and then places it back and puts 10 more balls of that color into the bag. Then you draw a ball. What is the probability that the 10 balls added were red, given that you drew out a red ball?