

Math 10B with Professor Stankova

Quiz 6; Tuesday, 2/27/2018

Section #211; Time: 11 AM

GSI name: Roy Zhao

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

---

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

1. True    False    The PMF function  $f$  goes from subsets of  $\mathbb{R}$  to  $[0, 1]$ .
2. True    False    The PMF function  $f$  is defined for all of  $\mathbb{R}$  but is only nonzero on the range of  $X$ .

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

3. (10 points) (a) (3 points) I am conducting a survey on teenagers under 18. Suppose that there are an equal number of people aged 13 through 18, which is the population I am surveying. Let  $X$  be the age of the person I interview. Find and draw the PMF associated to  $X$ .

- (b) (4 points) Suppose that I may interview the same person twice. I interview 100 people total. What is the probability that I interview 20 or 21 18 year olds?

- (c) (3 points) What is the probability that I have to interview 12 people until I interview a high schooler (aged 15 – 18, the high schooler is the 12th person I interview)?