

## **Math 153 - Quiz 8**

March 29, 2018

Name \_\_\_\_\_

Score \_\_\_\_\_

Show all work to receive full credit. Supply explanations when necessary.

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1. (5.5 points) Throughout the world, there are about 450 earthquakes per month that measure more than 4.5 on the moment magnitude scale.
  - (a) What is the average number of these earthquakes per week?
  - (b) In any given week, what is the probability that there are exactly 120 of these earthquakes?
  - (c) In any given week, what is the probability that there are at least 115 of these earthquakes?
  - (d) What is an unusually large weekly number of these earthquakes?
2. (4.5 points) According to a recent Gallup poll, 78% of Americans prefer drug-free pain management over doctor-prescribed pain medication. A random sample of 35 Americans is obtained.
  - (a) What is the probability that fewer than 20 prefer drug-free pain management?
  - (b) What is the probability that 25 prefer drug-free pain management?
  - (c) In the sample of 35, what would be an unusually small number of people who prefer drug-free pain management?