

## STAT 157 – Practice Test 3

Winter 2020

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

Instructor: Patricia Wrean

**Total: 15 points**

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1. (6 points) The mean price for a barrel of crude oil in July 2014 was \$105. Let's assume that the price is normally distributed with a standard deviation of \$8.

(a) Find the probability that the price for a barrel of crude oil is above \$100.

(b) Find the probability that the price for a barrel of crude oil is between \$90 and \$100.

(c) 99.5% of the time, the price is above a certain amount. Calculate that amount.

2. (6 points) A random sample of 60 cans of Coke had an average volume of 355.3 mL and a standard deviation of 2.5 mL.
- (a) Find a 95% confidence interval for the average volume among all cans of Coke.

- (b) Would a 99% confidence interval be wider or narrower than the 95% confidence interval in part (a)? Explain your reasoning briefly.

3. (3 points) Consider the following table

$x$	$p(x)$
-5	0.15
-2	0.2
1	0.4
6	0.25

(a) Is the variable  $x$  discrete or continuous?

(b) Is this table a valid probability distribution? Explain your reasoning briefly.