

Name: _____

MATH 108

Spring 2023

HW 9: Due 03/08

“One of the first things taught in introductory statistics textbooks is that correlation is not causation. It is also one of the first things forgotten.”

– Thomas Sowell

Problem 1. (10pt) Anwesh is comparing costs of homes in different areas. In a particular suburbs, the house prices are approximately normally distributed with mean \$330,000 and standard deviation \$50,000. While in a particular rural area, the house prices are normally distributed with mean \$250,000 and standard deviation \$17,000. In which area would a house that costs \$290,000 cost more than the average house? Explain. In which area would a house that costs \$290,000 be more ‘unusual’? Explain.

Problem 2. (10pt) Suppose you have the normal distribution $N(224, 46.9)$. Let X be a value randomly drawn from this distribution. Showing all your work, compute the following:

(a) $P(X = 220)$

(b) $P(X < 200)$

(c) $P(X < 300)$

(d) $P(X > 300)$

(e) $P(200 < X < 300)$

(f) The value Y that 'mark's the largest 8% of values for this distribution.