Practice worksheet | Sampling and confidence intervals

Sample means and the central-limit idea

Name: _____ Date: _____

6 questions | 12 marks

1. For $\mu = 72, \sigma = 18, n = 36$, find the mean and variance of $\bar{X}$. [2 marks]

2. Normal observations have mean 100 and standard deviation 20. Model a mean of 16 independent observations. [2 marks]

3. For the previous model, find $P(\bar{X} > 110)$. [2 marks]

4. Why need a mean of four highly right-skewed observations not be approximately normal? [2 marks]

5. What changes as independent sample size grows for a non-normal finite-variance population? [2 marks]

6. Why can 100 consecutive readings from one drifting sensor fail independence? [2 marks]