

THE CENTRAL LIMIT THEOREM: PRACTICE (MODIFIED R. BLOOM)

THE CENTRAL LIMIT THEOREM

STUDENT LEARNING OUTCOMES:

- THE STUDENT WILL EXPLORE THE PROPERTIES OF DATA THROUGH THE CENTRAL LIMIT THEOREM.

GIVEN:

Yoonie is a personnel manager in a large corporation. Each month she must review 16 of the employees. From past experience, she has found that the reviews take her approximately 4 hours each to do with a population standard deviation of 1.2 hours. Let X be the random variable representing the time it takes her to complete one review. Assume X is normally distributed. Let \bar{X} be the random variable representing the average time to complete the 16 reviews

DISTRIBUTION

Complete the distributions.

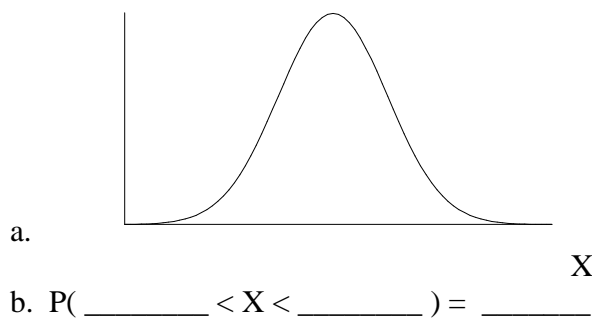
1. $X \sim$ _____
2. $\bar{X} \sim$ _____

GRAPHING PROBABILITY

For each problem below:

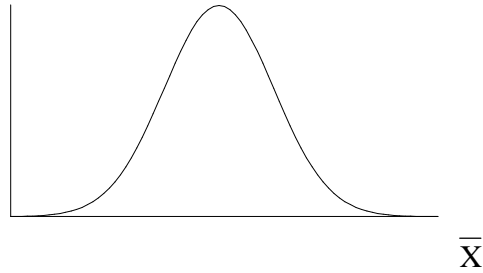
- a. Sketch the graph. Label and scale the horizontal axis. Shade the region corresponding to the probability.
- b. Find the probability or value requested

1. Find the probability that **one** review will take Yoonie from 3.5 to 4.25 hours.



2. Find the probability that the **average** of a month's reviews will take Yoonie from 3.5 to 4.25 hrs.

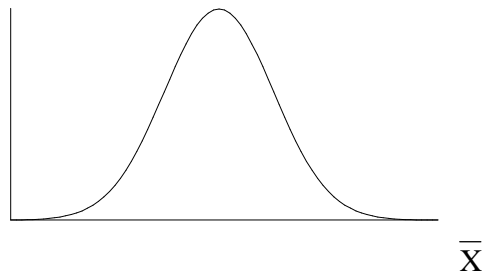
a.



b. $P() = \underline{\hspace{2cm}}$

3. Find the 95th percentile for the **average** time to complete one month's reviews.

a.



b.

DISCUSSION QUESTION

4. What causes the probabilities in (1) and (2) to differ?