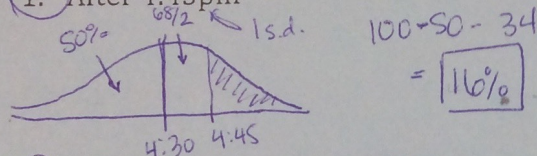


HW 12-2  
Populations/Samples

Name: Selected Answers  
Date: \_\_\_\_\_ Class: \_\_\_\_\_

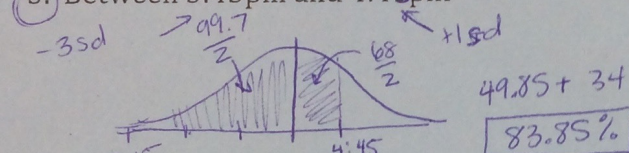
Flight 202's arrival time is normally distributed with a mean arrival time of 4:30pm and a standard deviation of 15 minutes. Find the probability that a randomly chosen arrival time is within the given time period.

1. After 4:45pm



2. Between 4:15pm and 5:00pm

3. Between 3:45pm and 4:45pm

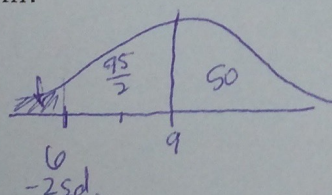


4. By 4:45pm

At a shoe factory, the number of various shoe sizes produced is normally distributed with a mean of size 9 and a standard deviation of 1.5 sizes.

5. What is the probability that a shoe size will be larger than size 10.5 if a supervisor chooses a shoe at random?

6. What is the probability that a shoe size will be smaller than size 6 if a supervisor chooses a shoe at random?



$$50 - \frac{95}{2} = 47.5$$

$$50 - 47.5 = 2.5\%$$

7. What is the probability that a shoe size will be between sizes 7.5 and 12 if a supervisor chooses a shoe at random?

For questions 8-9 identify the population and sampling method.

8. A quality control inspector at a computer assembly plant needs to estimate the number of defective computers in a group of 250 computers. He tests 25 randomly chosen computers.

Population:

Method:



9. The manager of a movie theater wants to know how the movie viewers felt about the new stadium seating at the theater. She asks every 30<sup>th</sup> person who exits the theater each Saturday night for a month.

Population: Movie Viewers

Method: Systematic

For questions 10-11 decide whether the sampling method could result in a biased sample. Explain your reasoning.

10. On the first day of school, all of the incoming freshmen attend an orientation program. Afterward, the principal wants to learn the opinions of the freshmen regarding the orientation. She decides to ask 25 freshmen as they leave the auditorium to complete a questionnaire.

Bias: Undercoverage

(only the FIRST get asked, none of the others that hang in the back.)

11. The members of the school drama club want to know how much students are willing to pay for a ticket to one of their productions. They decide that each member of the drama club should ask 5 of his or her friends what they are each willing to pay.

A reporter for a high school newspaper asked all members of the school's track team how many miles they run each week.

12. What type of data did the reporter gather? → Parameter or Statistic?

13. Was the reporter's data-gathering technique a census or a sample? Explain.

14. Is the data representative of the entire student body? Why or why not?