



► Solve the problems.

- 1 Emma has a coupon for \$5.25 off a frame that normally costs \$15.00. What percent discount does she receive on the frame? Show your work.

SOLUTION _____

- 2 Lincoln estimates the height of a tree. Lincoln's estimate has a 6% error. The actual height of the tree is 17 feet. What could be Lincoln's estimate? Select all the correct answers.

- A 11
B 15.98
C 18.02
D 16.94
E 23

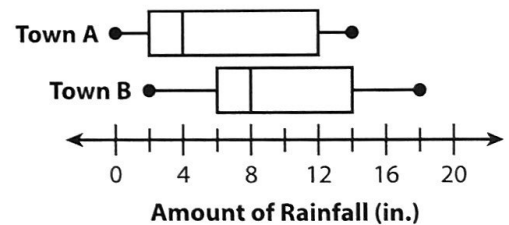


- 3 The developer for a movie-streaming service wants to survey its customers to help determine features for a new app. Which sampling method would produce a representative sample of the population of the movie-streaming service's customers?

Choose Yes or No for each method.

	Yes	No
a. Spin an alphabet spinner four times and record the letters. Survey everyone at the local movie theater whose name begins with any of the letters.	<input type="radio"/>	<input type="radio"/>
b. Use a random number generator to generate two numbers. Survey every current customer whose address includes those two numbers.	<input type="radio"/>	<input type="radio"/>
c. Use a random letter generator to select six letters. Survey everyone on the e-mail list whose e-mail address begins with one of those letters.	<input type="radio"/>	<input type="radio"/>
d. Stand by the movie section at a store and survey everyone that buys a movie.	<input type="radio"/>	<input type="radio"/>

- 4 The box plots show the amount of rainfall, in inches, in two different towns during storms. Express the difference in the median amounts of rainfall as a multiple of the IQR for each data set. Show your work.



SOLUTION _____



- 5 Samuel buys 3 bottles of juice that each have an original price of \$2.80. He uses a coupon for 35% off. How much does Samuel pay for 3 bottles of juice?

A \$5.46
B \$2.94
C \$1.82
D \$0.98

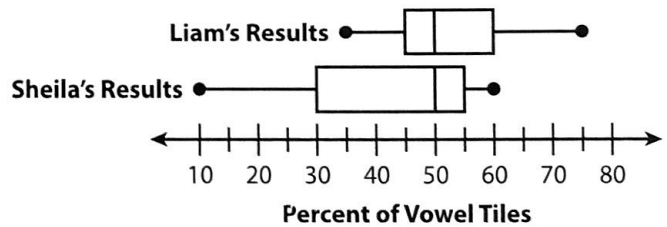
- 6 Grayson and Theo collect items to recycle. The table shows the number of metal and plastic items each person collects. If Grayson collects 400 items and Theo collects 300 items, who would be expected to have more metal items? Show your work.

	Metal	Plastic
Grayson	33	27
Theo	13	7

SOLUTION _____



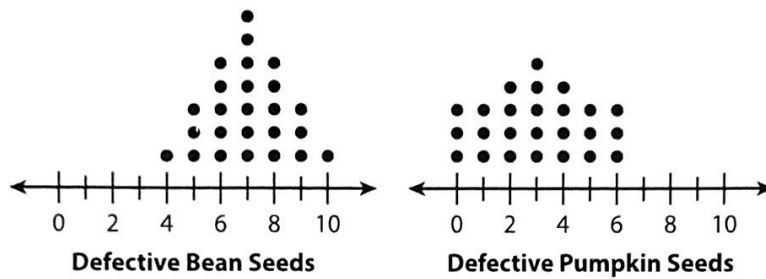
- 8 Liam and Sheila have a container with 400 letter tiles. Each letter tile shows either a consonant or a vowel. They each select a sample of letter tiles from the container, count the number that show vowels, and return the letter tiles to the container. They both collect 30 samples, as shown in the box plots. Would it be better to use one of Liam's or Sheila's samples to make an estimate of the number of vowel tiles in the container? Explain your reasoning.



SOLUTION _____



- 9 A seed company tests 25 random samples of 250 bean seeds and 25 random samples of 250 pumpkin seeds. The dot plots show the number of defective seeds in each sample. The owner wants to order 1,750 bean seeds and 1,750 pumpkin seeds. How many more defective bean seeds would be expected than defective pumpkin seeds? Show your work.

**SOLUTION** _____

- 10 Last year, 470 people attended Fairfield Community Day. This year, 585 people attended the event. To the nearest percent, what is the percent change in the number of people who attended Fairfield Community Day?
- A 19% B 20% C 24% D 25%
- 11 Arielle wants to survey soccer players to determine whether they would prefer to wear short-sleeved or long-sleeved jerseys. Arielle decides to go to a soccer game and survey every fourth person watching the game. Is this sample likely to be representative of soccer players? Explain your reasoning.

SOLUTION _____

- 12 The principal of Carver Middle School wants to build a student lounge. The principal wants to know how many students would want table tennis.

PART A What is one way the principal could select a random sample that would be representative of the middle school students? Explain your reasoning.

SOLUTION _____

PART B The principal surveys a random sample of 120 students about table tennis. The results are shown in the table. If the middle school has 450 Grade 7 students and 350 Grade 8 students, about how many total students would be expected to want table tennis? Show your work.

	Want Table Tennis	Do Not Want Table Tennis
Grade 7	13	27
Grade 8	31	49

SOLUTION _____