

Review & Preview

1-30.

Kerin discovered that a human's height is related to his or her reach. Kerin is curious if the same thing is true for foot size.

- a. It was not practical for Kerin to measure her classmates' feet, so Kerin collected the following shoe-size data from some of her classmates. Make a graph with appropriately scaled axes.

Shoe Size	Height (cm)
6	153
8	160
7.5	155
8.5	161
8	168
8	166
8.5	164
6.5	156
10	170
9.5	167
7.5	158
7.5	156
8	161

- b. Is there a relationship between shoe size and height?

1-31.

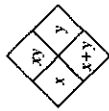
One important statistical display is a box plot. If you need help remembering what a box plot is, refer to the glossary before you complete parts (a) through (d) below.

- a. What is the median shoe size in problem 1-30? The minimum shoe size? The maximum?
- b. What are the quartiles (the median of the upper half, and the median of the lower half)?
- c. Above a number line, plot the five numbers you found in parts (a) and (b) and then create a box plot.
- d. Where does your own shoe size fall in the distribution of Kerin's

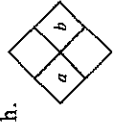
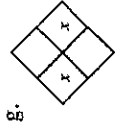
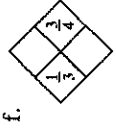
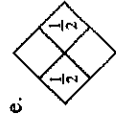
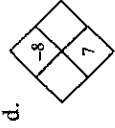
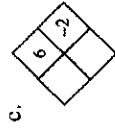
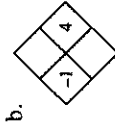
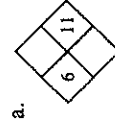
1-32.

Latisha is determined to do well in school this year. Her goal is to maintain at least an 85% average (mean) in all of her courses.

- a. Latisha started her history class with two scores on tests, 72% and 89%. Confirm that the mean of these two scores is 80.5%. Show your work.
- b. Latisha's third score was 90%. Use her scores from part (a) to figure out her mean now. Be sure to show your work.



On your paper, copy the Diamond Problems below and use the pattern you discovered earlier to complete each of them. The pattern is shown at right. Some of these may be challenging!



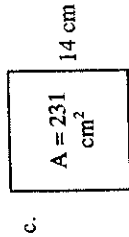
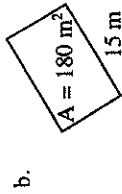
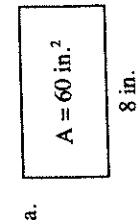
1-34.

Compute *without* using a calculator.

- a. $-15 + 7$ b. $8 - (-21)$ c. $6(-8)$
- d. $-9 + (-13)$ e. $-50 - 30$ f. $3 - (-9)$
- g. $-75 - (-75)$ h. $(-3) + 6$ i. $9 + (-14)$
- j. $28 - (-2)$ k. $-3 + (-2) + 5$ l. $3 + 2 + 5$



1-35. The area of each rectangle below is shown in the middle of the rectangle. For each figure, find the missing length or width.



1-36. Without using a calculator, compute the value of the following expressions.

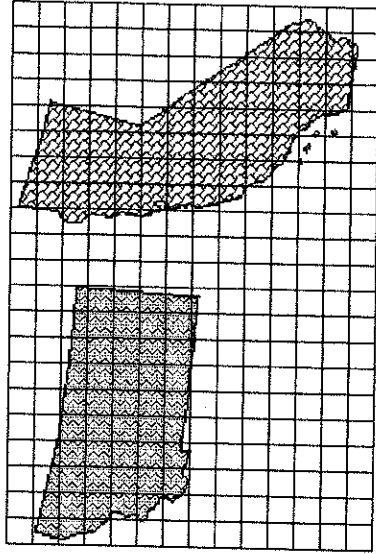
- $\frac{3}{7} + \frac{2}{3}$
- $1.2 + 0.04$
- $\frac{11}{4}$ of $\frac{3}{7}$
- $4.16(0.2)$

1-37. Latisha earned an 85% on her test today. Her previous scores were 72%, 89%, and 90%. Calculate her new average (mean).

1-38. Consider this data: 22, 15, 30, 51, 27, 33, 19.

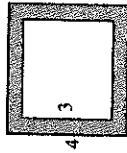
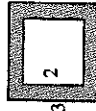
- Arrange the data into a stem-and-leaf plot. (Refer to the glossary if you need a reminder of what a stem-and-leaf plot is.)
- Find the mean and median.
- If the value 51 was replaced with 33, which measure(s) of central tendency would change and which would not? Explain.

1-39. Estimate the areas of Montana and California using the grid below. Which state has the greatest area? Compare the area of Montana to the area of California. Explain how you estimated the area of each state.



1-40. The pattern below is composed of nested squares.

- Draw the next figure in the pattern.



- Find the area of the shaded region for the figure you drew in part (a).