

Name:

3-A Averages

1. Scores on last year's Statistics chapter 3 test were 25, 42, 44, 56, 56, 57, 69, 69, 70, 72, 76, 77, 78, 78, 78, 81, 82, 82, 83, 84, 84, 84, 85, 85, 85, 85, 85, 85, 85, 88, 89, 89, 89, 89, 89, 90, 90, 90, 91, 92, 92, 92, 92, 92, 92, 93, 93, 93, 93, 94, 96, 96, 96, 96, 96, 96, 97, 97, 97, 98, 99, 100, 100, 100, 100, 101, 101, 102, 104, 104, 104, and 105. Find the following.

- a) mode(s)
- b) median
- c) 30% trimmed mean

2. Calculate the following for the data set { 2, 9, 4 }.

- a) $\sum X$
- b) μ
- c) $\sum(x - \mu)^2$
- d) $\sqrt{\frac{\sum(x - \mu)^2}{n}}$

3-B Variation

3. What value was calculated in #2d above?

4. Nathan asks five people how long it takes them to get to school. Fill in the following blanks.

x	$x - \bar{x}$	$(x - \bar{x})^2$
8	_____	_____
11	_____	_____
12	_____	_____
15	_____	_____
19	_____	_____

$\sum X =$ _____ $\sum(x - \bar{x})^2 =$ _____

$\bar{x} =$ _____ \div _____ $= 13$

$\sigma^2 =$ _____ \div _____ $=$ _____

$s^2 =$ _____ \div _____ $=$ _____

$\sigma = \sqrt{\text{_____}} =$ _____

$s = \sqrt{\text{_____}} =$ _____

population CV = _____ \div _____ $=$ _____

sample CV = _____ \div _____ $=$ _____

5. Identify the meaning of the following values calculated in #4 above.

- a) σ
- b) s

5. Use a graphing calculator to find the sample standard deviation of 29, 33, 34, 39, 39, and 46.

3-C Mean and Standard Deviation of Grouped Data

6. Eighteen percent of the iPads Savannah sells are 16GB, 33% are 32GB, 29% are 64GB and 20% are 128GB. Finish filling in the following chart to calculate the mean capacity of iPads sold.

f	x	fx
.18	16	2.88
_____	_____	_____
_____	_____	_____
_____	_____	_____
$\Sigma f = 1.00$		$\Sigma fx =$ _____

7. In Savannah's marketing survey, 12 iPad purchasers claimed to have an annual income (in thousands) of \$0 to \$10, 7 said \$10 to \$40, 55 said \$40 to \$100, and 14 said \$100 to \$200. Use a calculator table to finish filling in the following chart to calculate an estimate for the mean and sample standard deviation.

f	x	fx	$(x - \bar{x})$	$(x - \bar{x})^2$	$f(x - \bar{x})^2$
12	5	_____	_____	_____	_____
7	25	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
$\Sigma f =$ _____		$\Sigma fx =$ _____	$\Sigma f(x - \bar{x})^2 =$ _____		

$\bar{x} \approx$ _____ \div _____ $= 70.284$

$s \approx \sqrt{(\text{_____} \div \text{_____})} =$ _____

3-D Percentiles and Quartiles

8. The following are spring semester grades for Statistics last year: 60, 61, 69, 69, 69, 70, 70, 71, 72, 72, 73, 73, 73, 74, 75, 75, 76, 76, 76, 76, 76, 77, 77, 77, 78, 78, 78, 79, 80, 80, 81, 81, 81, 81, 82, 82, 82, 83, 83, 83, 83, 84, 85, 85, 85, 86, 86, 86, 88, 89, 89, 91, 91, 92, 92, 92, 92, 93, 94, 94, 94, 94, 95, 95, 96, 96, 97, 98, 98, and 99. Identify the following values.

- a) Q_1
- b) Q_2
- c) Q_3
- d) 20th percentile

9. Which of the scores above are outliers, if any?

10. Make a box-and-whisker plot for the grades shown above.