

Math 206 - Quiz 5

March 21, 2018

Name key

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (4 points) The depths (in inches) at which 10 artifacts were found at an archaeological dig are listed below.

20.7 24.8 30.5 26.2 36.0 34.3 30.3 29.5 27.0 38.5

- (a) Find the range of the data set.

$$\text{MIN} = 20.7$$

$$\text{MAX} = 38.5$$

$$\text{Range} = 38.5 - 20.7 = \boxed{17.8}$$

- (b) Use your calculator to compute the standard deviation.

$$\sigma \approx 5.14$$

- (c) Compute the CV (coefficient of variation).

$$\bar{x} = 29.78$$

$$\text{CV} = \frac{5.14}{29.78} \approx 0.1726 \approx \boxed{17\%}$$

- (d) Do you think the standard deviation you computed above is big or small? Explain.

IT IS PRETTY BIG, BUT NOT HUGE!

WITH A CV OF ABOUT 17%, THERE IS QUITE A BIT OF SPREAD.

2. (1 point) You are applying for jobs at two companies. Company A offers starting salaries with $\bar{x} = \$31,000$ and $s = \$1000$. Company B offers starting salaries with $\bar{x} = \$31,000$ and $s = \$5000$. From which company are you more likely to get an offer of \$33,000 or more? Explain why you think so.

For Company A,

$$\bar{x} + 2s = \$33,000$$

WOULD BE AN UNUSUALLY LARGE SALARY.

For Company B,

\$33,000 IS LESS THAN

ONE STD. DEV ABOVE THE MEAN. IT IS LIKELY THAT YOU COULD BE OFFERED THIS MUCH.