AMS 102: QUIZ 2

SOLUTIONS

Given the data set $\{-3, 0, 0, 2, 3, 4\}$,

(a) compute the mean;

$$\bar{x} = \frac{-3 + 0 + 0 + 2 + 3 + 4}{6} = \frac{6}{6} = 1.$$

(b) compute the median;

$(0 + 2)/2 = 1.$

(c) compute the mode;

The most common value is 0.

(d) compute the standard deviation (*hint*: $\sum x_i^2 = 38$);

$$s = \sqrt{\frac{6 \sum x^2 - (\sum x)^2}{6(6-1)}} = \sqrt{\frac{6 \cdot 38 - 6^2}{30}} = \sqrt{\frac{228 - 36}{30}} = \sqrt{\frac{192}{30}} = \sqrt{\frac{32}{5}} = \sqrt{6.4} \approx 2.5.$$

(e) determine the outliers (if any) according to the 1.5×IQR rule.

Q1 is 0; Q2 is the median, 1; Q3 is 3. 1.5×IQR= $1.5 \cdot (3-0) = 4.5$. Inner fences: $1.5 - 4.5 = -3$ and $1.5 + 4.5 = 6$. All values are between inner fences -3 and 6. There are no outliers.