

Solutions for Math 148 Quiz Two Version B

Feb 9, 2016

1. The table below shows the number of primes between 0 and 100 within each given interval. Draw the histogram of the data in the table:

Interval	0-30	30-70	70-90	90-100
# of primes	10	9	5	1

The histogram is **(a) left tailed**.

- (a) Left tailed
(b) Right tailed
(c) Symmetric
2. Find the median and the SD of the list $\vec{x} = (4, -3, 7, 12, -5)$. Write the formulas with numbers plugged in.

median: 4;

$$\text{Avg} = \frac{4 + (-3) + 7 + 12 + (-5)}{5} = 3;$$

$$\text{SD} = \sqrt{\frac{(4-3)^2 + (-3-3)^2 + (7-3)^2 + (12-3)^2 + (-5-3)^2}{5}} = 6.293.$$

3. Among all applicants to a certain university one year, the Math SAT scores followed the normal curve with an average of 535 and SD of 100. Use the z-table to answer the following questions.

- (a) If a student scored 685, in what percentile are they?

$$z = \frac{685 - 535}{100} = 1.5 \sim 86.64\%;$$

$$86.64\% / 2 + 50\% = 93.42\% \sim 94\text{th percentile.}$$

- (b) Estimate the 73rd percentile of the test scores.

$$73\% - 50\% = 23\%, \quad 23\% \times 2 = 46\% \sim z = 0.6;$$

$$535 + .6 \times 100 = 595.$$