

# 223 Homework #4 Key

6

1a. mean:  $\bar{x} = 3.4$

b. median:  $\tilde{x} = 3$

c. St. dev:  $S = 3.05$

d. range:  $7 - 0 = 7$

2. a. mean:  $\bar{x} = 13.5$

b.  $Q_1 = 9.5$

c. interquartile range:  $Q_3 - Q_1 = 16.5 - 9.5 = 7$

d. St. dev  $S = 6.41$

e.  $P_{40}$  ( $8^{th}$ ) =  $x_8 = 11$

f.  $D_1 = P_{10} = x_2 = 5$

g. percentile of 22 =  $90^{th}$

h. upper fence

$$\frac{16.5 + 10.5}{(1.5)(7)} = 27.$$

i.  $\tilde{x} = 13$  median

j.  $Q_3 = 16.5$

k. Mode = 16

l. Range =  $27 - 2 = 25$

m.  $P_{90} = x_{18} = 22$

n. percentile of  $x_6 = \frac{6}{20} = 30^{th}$

o. lower fence  $\frac{9.5 - 10.5}{(1.5)(7)} = -1$

3. a.  $0^{th}$  or  $0.15^{th}$  percentile

b.  $16^{th}$  percentile

c.  $97.5^{th}$  percentile

d.  $2.5^{th}$  percentile

e.  $66^{th}$  percentile

f.  $99.85^{th}$  percentile

4.  $\frac{180 - 160}{12} = 1.67$  Lisa

Barb ranks higher

$\frac{160 - 145}{8} = 1.875$  Barb

5.  $\frac{92 - 84}{8} = 1$  Carolina

$\frac{89 - 75}{10} = 1.4$  Lisa

Lisa got the higher score.