HW#1 Solutions (Due September 09, 2008)

4. $n = 20$ $\Sigma X = 333.3$

a) $\overline{X} = 16.67$ min.

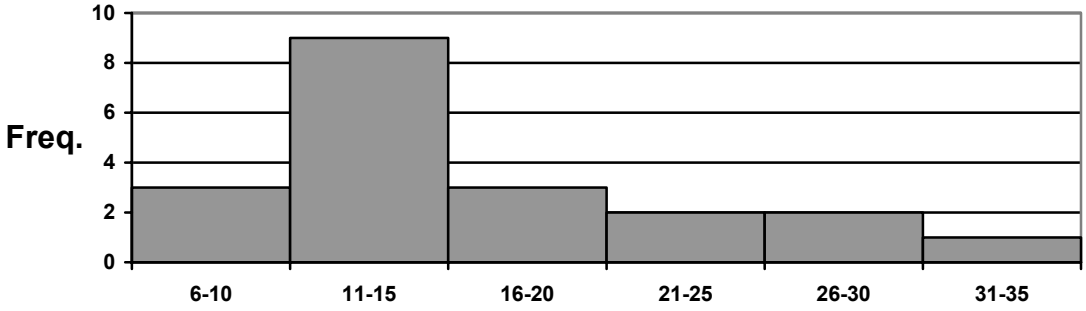
b) $s = 6.73$ min.

c) median = 14.5 min.

d) No evidence of outliers using the $\overline{X} \pm 3s$ rule ($16.67 \pm 3(6.73)$: -3.52 to 36.86) – the sample mean is a better measure of location.

e) **NOT ASSIGNED FOR HOMEWORK but will be used as class notes.**

Class	f
6-10.9	3
11-15.9	9
16-20.9	3
21-25.9	2
26-30.9	2
31-35.9	1



f)

Males	n = 10	$\overline{X} = 13.01$	median = 13.25	s = 2.70
Females	n = 10	$\overline{X} = 20.32$	median = 19.35	s = 7.65

Females scores much higher and more variable.

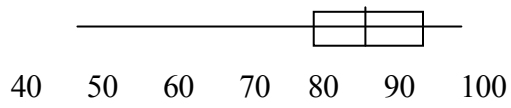
5.

e) $n = 8$

$$\left[\frac{n+2}{4}\right] = \left[\frac{10}{4}\right] = [2.5] = 2$$

$Q_1 = 77$, $Q_3 = 91$.

f)



6. $\overline{X} = 210 \quad s = 22.8$

68% between	$\overline{X} \pm s$	$210 \pm 22.8 = (187.2, 232.8)$
95% between	$\overline{X} \pm 2s$	$210 \pm 45.6 = (164.4, 255.6)$
Almost All	$\overline{X} \pm 3s$	$210 \pm 68.4 = (141.6, 278.4)$

8.

a) $Q_3 = 39$

b) $Q_1 = 26$

c) $IQR = Q_3 - Q_1 = 39 - 26 = 13, \ 1.5\ (IQR) = 19.5$
$Q_1 - 1.5\ IQR = 26 - 19.5 = 6.5$
$Q_3 + 1.5\ IQR = 39 + 19.5 = 58.5$
The maximum is 68, therefore there are outliers on the high end.

10.

a) 2

b) 9

c) Canadian patients have fewer visits (mean = 4) as compared to US patients (mean = 6).