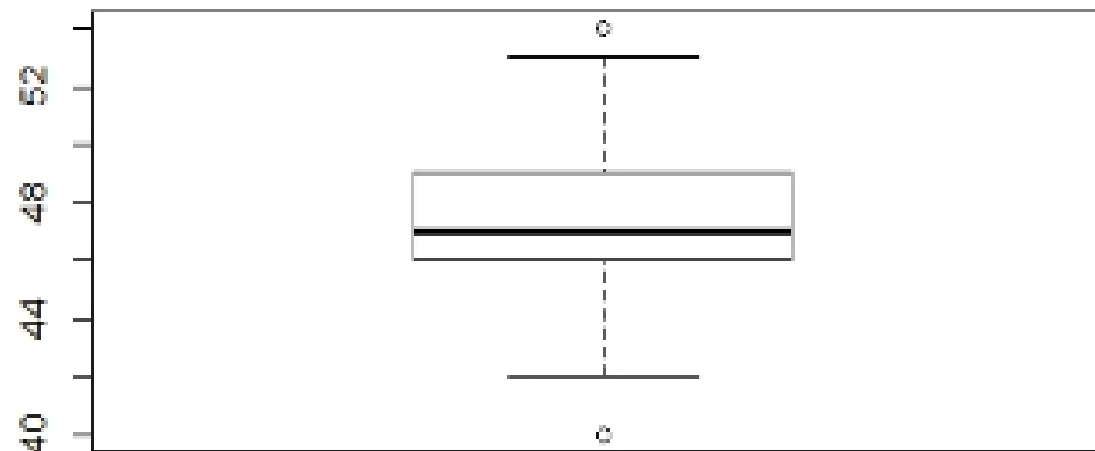


Stat 370 HW #2

1. A. Mean: 47.467, median: 47  
 B.  $S = \sqrt{1424/29} = 9.57$ ;                       $SD = \sqrt{9.57} = 3.09$   
 C.



D. The general shape of the data is right skewed or positive skew. We would use the median of 47 to describe the data since the plot is skewed. There are two outliers at points 40 and 54.

2. A.  $P(B^c) = .54$   
 B.  $P(A \cap B) = .21$  (not mutually exclusive).  
 C. A and C are mutually exclusive because  $P(A) + P(C) = P(A \cup C)$  thus making them mutually exclusive.  
 D.  $(A \cup B \cup C)^c$  represents the probability of none of the outcomes happening.  $[(A \cup B \cup C)^c] = 0$ .
3. A.  $P(D_{UL}) = .9$ ,  $P(D_{UR}) = .8$ ,  $P(D_{LL}) = .95$ ,  $P(D_{LR}) = .95 \rightarrow P(D_{UL}, D_{UR}) = P(D_{UL})P(D_{UR}) = .9 \cdot .8 = .72 \rightarrow$   
 $P(D_{LL}, D_{LR}) = P(D_{LL})P(D_{LR}) = .95 \cdot .95 = .9025 \rightarrow P(\text{upper}) = .72$  and  $P(\text{lower}) = .9025$   $P(\text{upp}^c) = 1 - .72 = .28$  and  
 $P(\text{low}^c) = 1 - .9025 = .0975 \rightarrow P(\text{upper or lower}) = 1 - (.28 \cdot .0975) = .9727$
4. A.  $P(X=2 \text{ or } 3) = .25 + .25 \rightarrow P(X=2 \text{ or } 3) = .5$   
 B.  $P(X < 2) = .1 + .15 \rightarrow P(X < 2) = .25$   
 C.  $P(X > 3) = .15 + .1 \rightarrow P(X > 3) = .25$   
 D.  $P(X \geq 1) = 1 - .1 \rightarrow P(X \geq 1) = .9$
5. B.  $f(x) = k(1+2x)$  for  $0 < x < 2 \rightarrow k = 1/6 \rightarrow E(x) = 11/9 \rightarrow V(x) = .284$