

1. Using line 106, the five numbers chosen are 233, 046, 041, 231, and 017.
2. This is an example of a voluntary response sample.
3. Find the class mark for each class of data: 22, 31, 40, 49, 58, 67.

Enter the class marks in  $L_1$ , and the number of people in  $L_2$ .

Choose 1-Var Stats  $L_1, L_2$  from the CALC menu.

$$\bar{x} = 43.8$$

$$s = 14.17$$

4. Since this sample consists of those individuals who are most easily accessible, the difference is most likely due to the use of a convenience sample.
5.
  - I. False. The mean is not one of the numbers in a five-number summary.
  - II. True.
  - III. True.
6.
  - I. False. The sample size is 1500.
  - II. False. The percentage of those in the sample who will vote for Candidate Smith is  $(714/1500) \cdot 100 = 47.6\%$ .
  - III. True.
  - IV. True.
7. This is a Type II scheduling problem: an unlimited number of processors (the number of 15 minute segments) each with a fixed capacity (15 minutes). Therefore, this problem can be solved using the worst-fit algorithm for bin packing.
8. Enter  $x$  values in  $L_1$  and  $y$  values in  $L_2$ .  
Choose Lin Reg  $(ax + b)L_1, L_2$  from CALC menu.  
 $a = 4.03120875$   
 $b = 10.82180841$   
The equation is  $y = 4.03x + 10.82$ , correct to two decimal places.

9.  $y = 4.03x + 10.82$   
 $y = 4.03(16.5) + 10.82$   
 $y = 77.3$  chirps/min. (correct to one decimal place)
10. There are 21 pieces of data represented by this histogram. The position of the median is  $\frac{n+1}{2} = \frac{21+1}{2} = 11$ . The piece of data in the eleventh position is the number 6. The mode is the most frequently occurring piece of data. The mode is also 6.

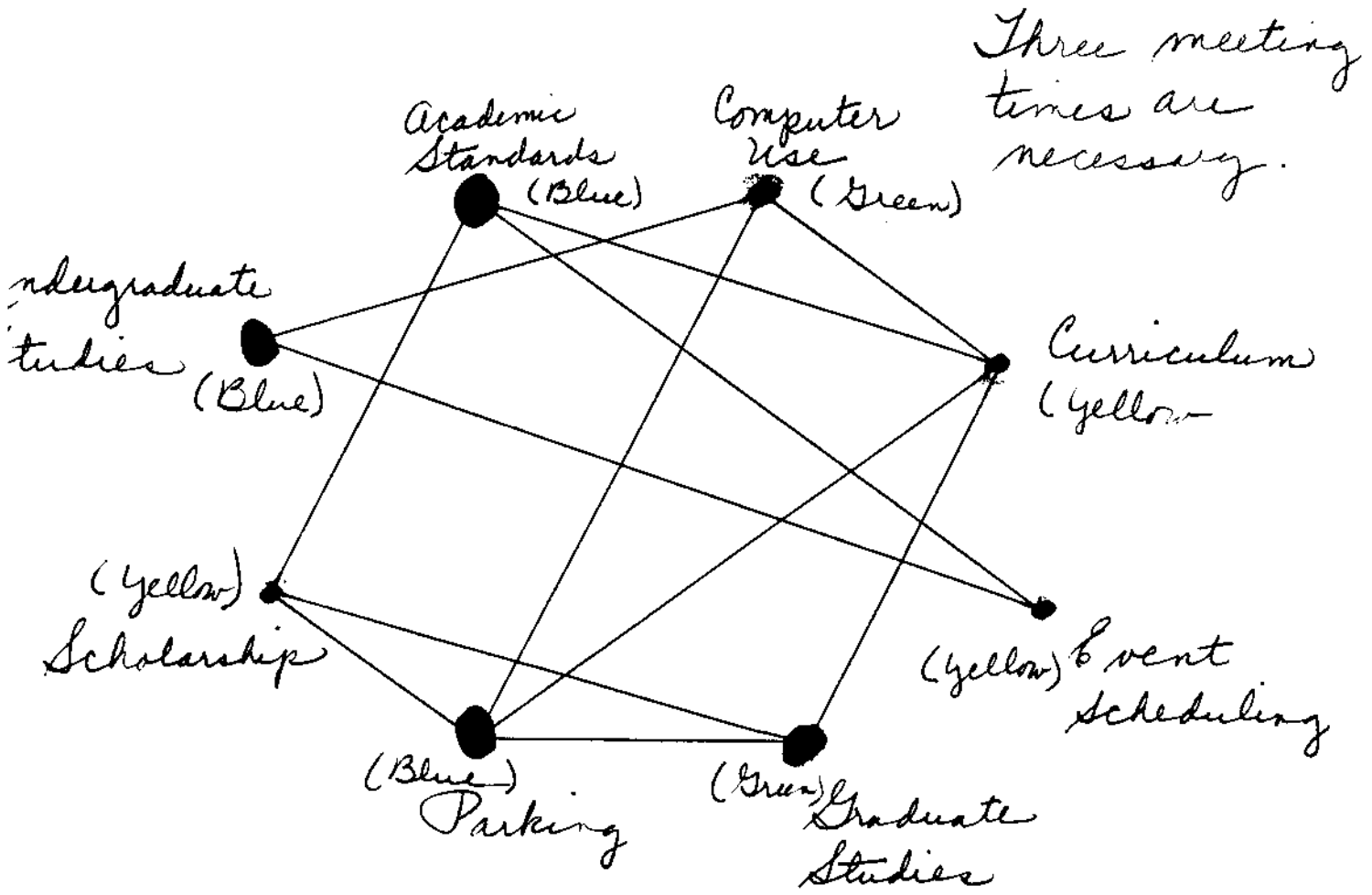
Name: \_\_\_\_\_

Section: \_\_\_\_\_

The following questions are free response. Please show all work in order to receive credit.

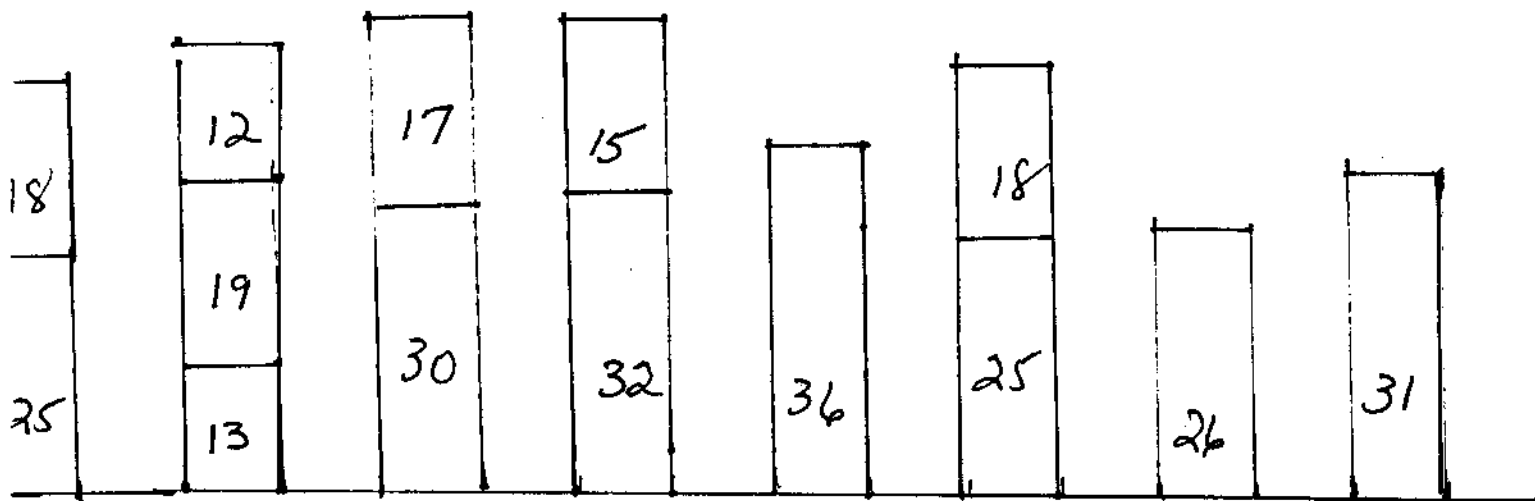
11. A college's faculty has a number of committees. To avoid conflicts, it is important not to schedule two committee meetings at the same time if the two committee meetings have faculty members in common. The table below lists possible conflicts. Draw the graph which would be useful in determining meeting times necessary to avoid conflict. What is the minimum number of meeting times? (8 points)

Committee	Has Member in Common With:
Academic Standards	Curriculum, Event Scheduling, Scholarship
Computer Use	Curriculum, Parking, Undergraduate Studies
Curriculum	Academic Standards, Computer Use, Graduate Studies, Parking
Event Scheduling	Academic Standards, Undergraduate Studies
Graduate Studies	Curriculum, Parking, Scholarship
Parking	Computer Use, Curriculum, Graduate Studies, Scholarship
Scholarship	Academic Standards, Graduate Studies, Parking
Undergraduate Studies	Computer Use, Event Scheduling

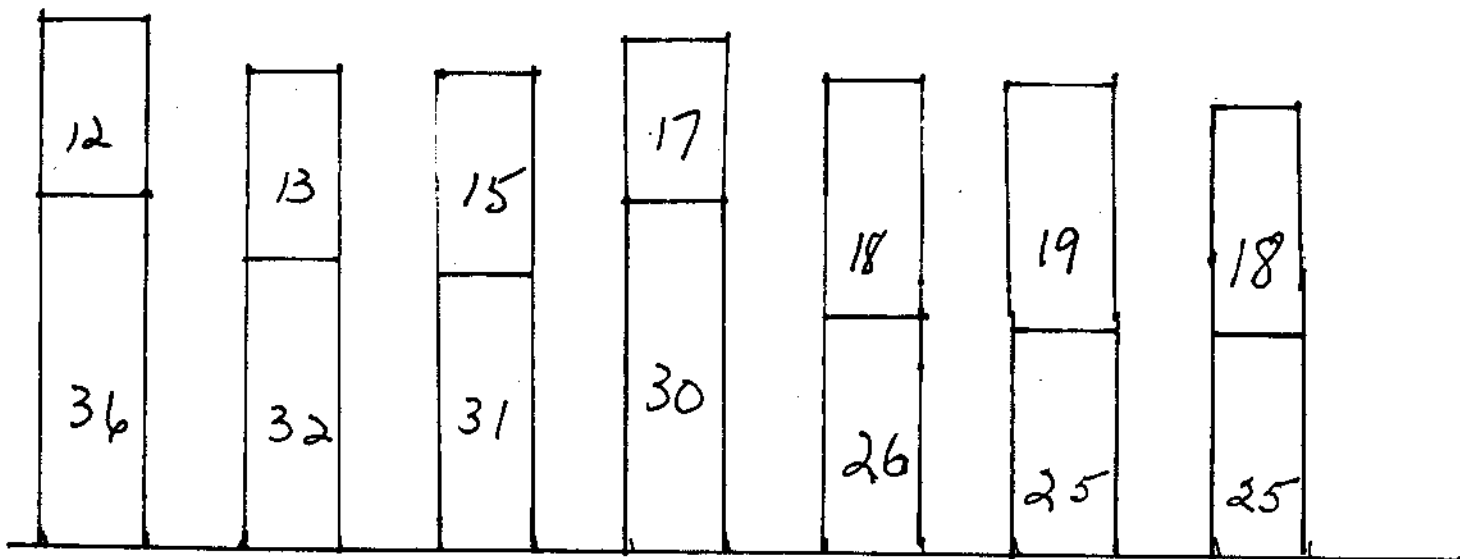


12. A carpenter needs to cut pieces of wood into the following lengths: 25, 18, 13, 19, 30, 32, 12, 36, 25, 17, 18, 26, 15, 31 inches. If wood comes in 48-inch lengths, how many pieces of wood would the carpenter require using the

a. first-fit algorithm (5 points)



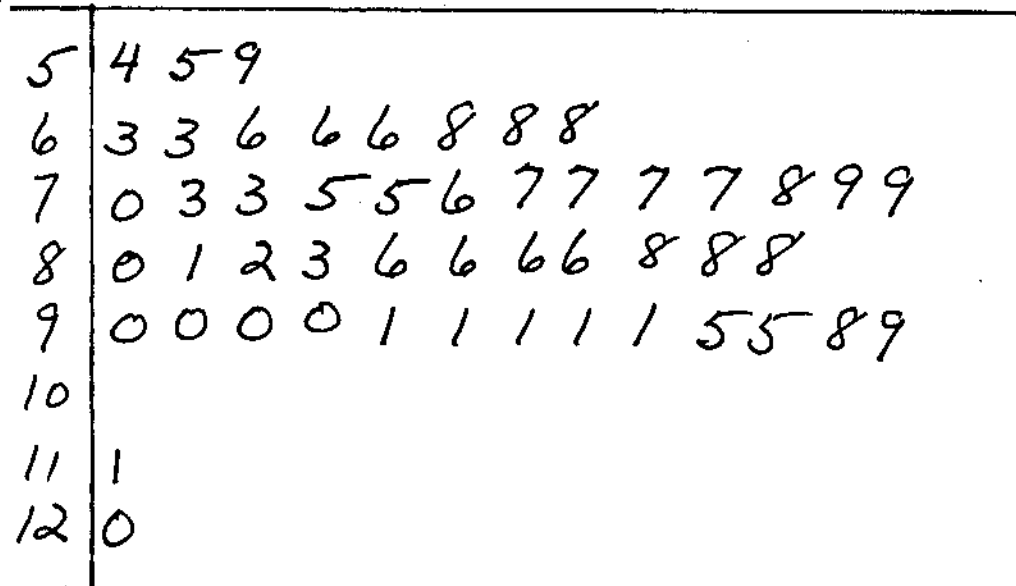
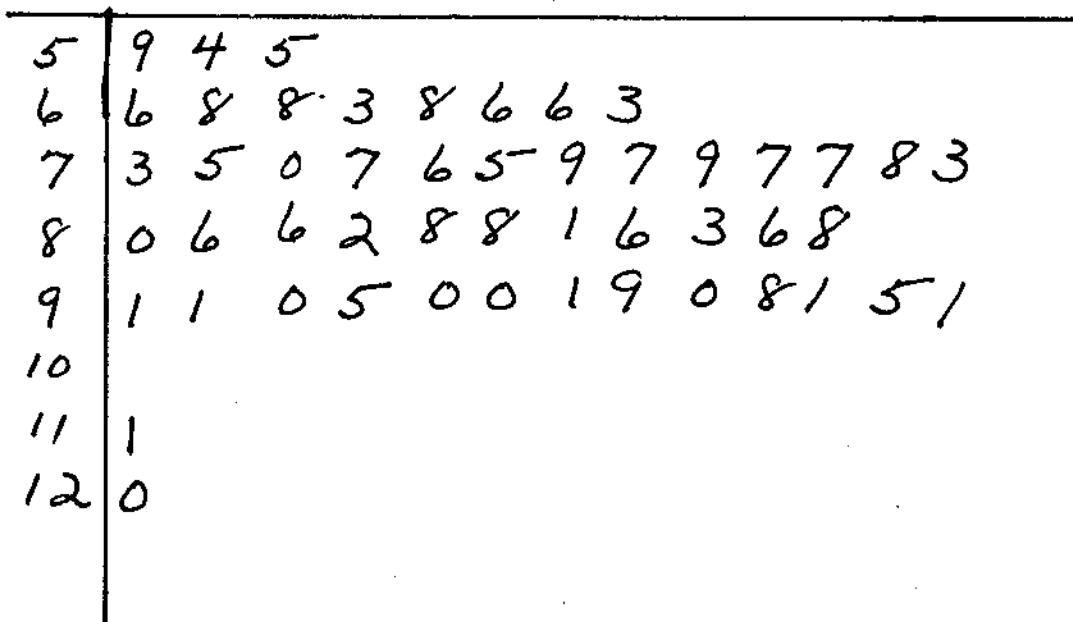
b. worst-fit decreasing algorithm (6 points)



13. *Financial Times* publishes the midday temperatures at well-known cities and nations located throughout the world. The table below shows the midday temperatures in °F on August 4, 1998, in 50 world locations.

73	75	88	63	98
75	86	88	111	55
70	79	95	90	78
80	91	90	77	88
77	68	81	77	63
66	68	86	68	91
91	86	90	83	95
76	90	91	66	91
59	77	99	86	120
54	82	79	66	73

- a. Construct an ordered stemplot for this data. (10 points)



b. Find the five-number summary. Be sure to show your work. (5 points)

position of  $M = \frac{50+1}{2} = 25.5$        $M = \frac{80+81}{2} = 80.5$

position of  $Q_1 = \frac{25+1}{2} = 13$        $Q_1 = 73$

position of  $Q_3 = \frac{25+1}{2} = 13$        $Q_3 = 90$

$L$	$Q_1$	$M$	$Q_3$	$H$
54	73	80.5	90	120

c. Construct a frequency distribution with classes of width 12. (10 points)

Range =  $120 - 54 = 66$

# Classes =  $\frac{\text{range}}{\text{Class width}}$   
 $= \frac{66}{12}$   
 $= 5.5$

$\approx 6$  Classes

Classes	Frequencies
54 - 65	5
66 - 77	16
78 - 89	14
90 - 101	13
102 - 113	1
114 - 125	1

d. Construct a frequency histogram with classes of width 12. (6 points)

