Fall '04/MAT 117/Worksheet 5 **Name:** Solution *Show all your work.*

(Final answers on both problems should have accuracy to 2 decimal places.)

1. (10pts) The frequency distribution of Wilhelm's golf scores on par 3 holes is given below.

a) What is the mode score? 5

b) What is the median score? 5 in order: $2, \underbrace{3,3}_{13}, \underbrace{4,4}_{16}, \underbrace{5,5,5}_{25}, \underbrace{6,6}_{18}, \underbrace{7,7}_{8}$

c) What is the mean score?

d) Find the relative frequencies.

e) Draw a pie chart representing the data.

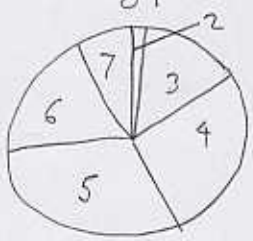
↑ 41st number is here

Score	Frequency	Rel. Frequency	Angle
2	1	0.01	4.44
3	13	0.16	57.78
4	16	0.20	71.11
5	25	0.31	111.11
6	18	0.22	80.00
7	8	0.10	35.56
	total 81		

c) $\mu = \dfrac{1\cdot 2 + 13\cdot 3 + 16\cdot 4 + 25\cdot 5 + 18\cdot 6 + 8\cdot 7}{81}$

$= \dfrac{394}{81} = 4.86$

e)



2. (10pts) On exam 3, this class achieved scores summarized in the table below.

a) Draw a bar graph for the data.

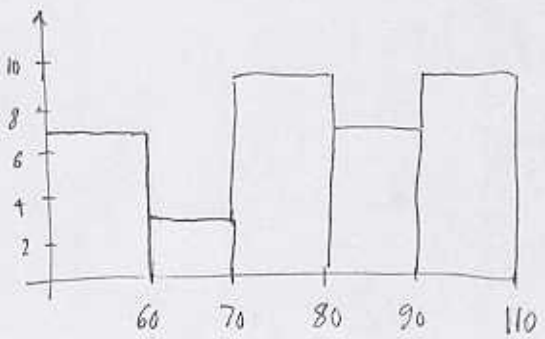
b) Enter a representative value for each interval.

c) Estimate the mean of data. Compare your estimate with the actual mean, found on the course webpage.

d) Estimate the standard deviation of data.

Range	Frequency	Rep. value
≥ 90	9	95
80–89	7	84.5
70–79	9	74.5
60–69	3	64.5
< 60	7	30
	35	

a)



c) $\mu = \dfrac{9\cdot 95 + 7\cdot 84.5 + 9\cdot 74.5 + 3\cdot 64.5 + 7\cdot 30}{35} = \dfrac{2520.5}{35} = 72.01$ actual mean 70.01, fairly close

d) Used $\mu = 72.01$

$\sigma^2 = \dfrac{9\cdot(95-72.01)^2 + 7\cdot(84.5-72.01)^2 + 9\cdot(74.5-72.01)^2 + 3\cdot(64.5-72.01)^2 + 7\cdot(30-72.01)^2}{35}$

$\sigma^2 = \dfrac{18427.74}{35} = 526.506\ldots \qquad \sigma = 22.95$