

MATH 1550 HW 1

1

§2.1

#11 | range = max - min = 64 - 9 = 55
class width = $\frac{\text{range}}{\# \text{ classes}} = \frac{55}{7} \approx 7.86 \xrightarrow{\text{round up}} 8$

lower limits: 9, 17, 25, 33, 41, 49, 57
upper limits: 16, 24, 32, 40, 48, 56, 64
+8 +8 +8...

#15 | a) class width = 10

b) class midpoints: 10, 36, 47, 58, 69, 80, 91

c) class boundaries: 20, 30 64, 74
31, 41 75, 85
42, 52 86, 96
53, 63

#20 | a) number of classes = 7

b) least frequency ≈ 1

c) largest frequency ≈ 23

d) class width = 53, because $\frac{72+125}{2} = 98.5$ is right class boundary of first class (note: 72 is center of that class)

So, distance from center to right boundary is

$$98.5 - 72 = 26.5$$

So total width is $2(26.5) = 53$

#29 | range = max value - min value = 39 - 0 = 39

class width = $\frac{\text{range}}{\# \text{ classes}} = \frac{39}{5} = 7.8 \xrightarrow{\text{round up}} 8$

Class	Frequency	Midpoint	Rel. Freq	Cumulative Freq
0-7	8	3.5	0.32	8
8-15	8	11.5	0.32	16
16-23	3	19.5	0.12	19
24-31	3	27.5	0.12	22
32-39	3	35.5	0.12	25

classes w/ greatest freq: 0-7 and 8-15

classes w/ least freq: 16-23, 24-31, and 32-39

#31

range = max - min = 7119 - 1000 = 6119

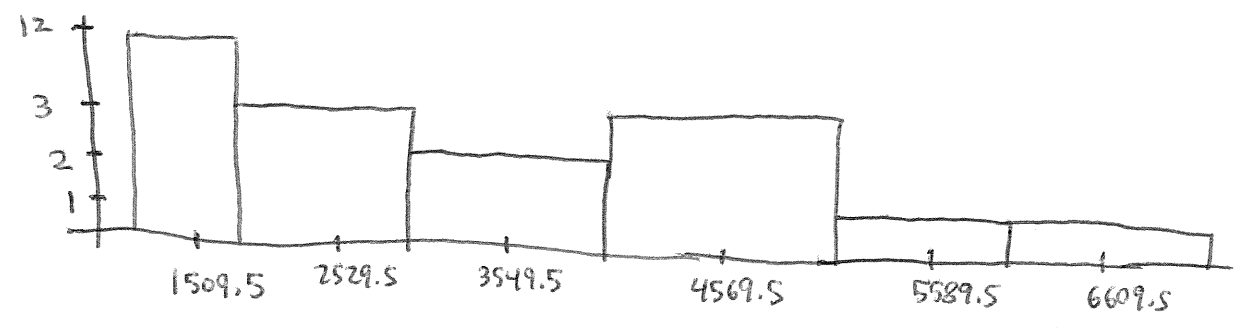
class width = $\frac{6119}{6} \approx 1019.83 \xrightarrow{\text{round up}} 1020$

2

Frequency distribution

<u>Classes</u>	<u>Frequency</u>	<u>Midpoint</u>	<u>Rel. Freq</u>	<u>Cumulative Freq</u>
1000 - 2019	12	1509.5	0.5455	12
2020 - 3039	3	2529.5	0.1364	15
3040 - 4059	2	3549.5	0.0909	17
4060 - 5079	3	4569.5	0.1364	20
5080 - 6099	1	5589.5	0.0455	21
6100 - 7119	1	6609.5	0.0455	22

Histogram



#35

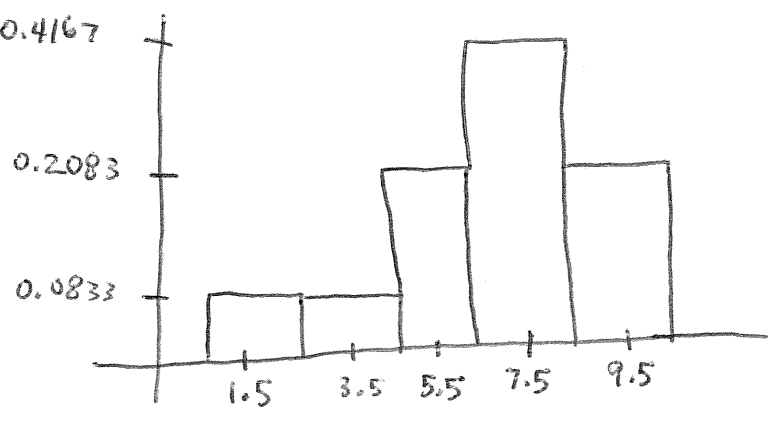
range = max - min = 10 - 1 = 9

class width = $\frac{\text{range}}{\# \text{ classes}} = \frac{9}{5} \approx 1.8 \xrightarrow{\text{round up}} 2$

Frequency distribution

<u>Class</u>	<u>Frequency</u>	<u>Midpoint</u>	<u>Rel. Freq</u>	<u>Cumulative Freq</u>
1-2	2	1.5	0.0833	2
3-4	2	3.5	0.0833	4
5-6	5	5.5	0.2083	9
7-8	10	7.5	0.4167	19
9-10	5	9.5	0.2083	24

class with greatest ^{rel.} freq: 7-8 0.4167
 class with least rel. freq: 1-2, 3-4



#39/

$$\text{range} = \text{max} - \text{min} = 73 - 52 = 21$$

$$\text{class width} = \frac{\text{range}}{\# \text{ classes}} = \frac{21}{6} \approx 3.5 \xrightarrow{\text{round}} 4$$

(3)

<u>Class</u>	<u>Frequency</u>	<u>Rel Freq</u>	<u>Cumulative Freq</u>
52-55	3	0.125	3
56-59	3	0.125	6
60-63	9	0.375	15
64-67	4	0.167	19
68-71	4	0.167	23
72-75	1	0.042	24

greatest increase: 60-63