

Chapter 2 answers

Sections 2.2 – 2.3 Problems

1. a) 2.4, 2.5

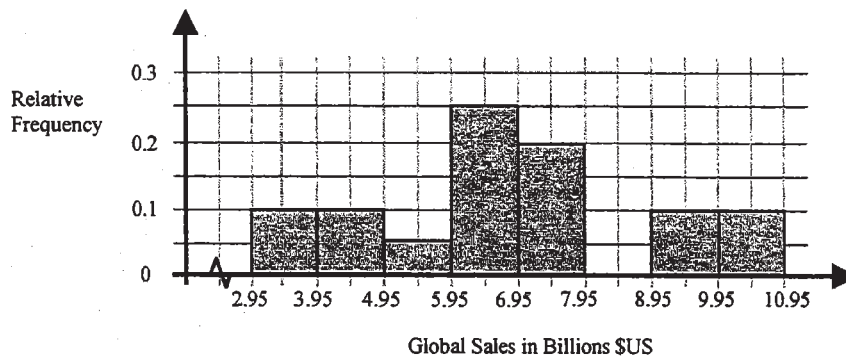
Global Sales (\$Billions US)	Frequency	Relative Frequency (for part (e))
3.0 - 3.9	2	0.10
4.0 - 4.9	2	0.10
5.0 - 5.9	1	0.05
6.0 - 6.9	5	0.25
7.0 - 7.9	4	0.20
8.0 - 8.9	0	0
9.0 - 9.9	3	0.15
10.0 - 10.9	3	0.15
Total	20	1.0

b) 2.95, 3.95

(c) 1.0

(d) 10.45

e) Global Sales in \$Billions US



f) Global Sales of Top 20 Companies (in \$Billions US)

10	566
9	089
8	
7	3468
6	02249
5	2
4	56
3	67

Stem = Billions Leaf = Tenths of Billions

2. a) 3 is skewed to the right

b) I would choose histogram 1 because most cars will be travelling at speeds around 80-90 km/h (the mode, or "peak" in the histogram); a few cars will be going faster, and some going slower, indicated by a spreading out of the histogram; the skewing to the left seems more reasonable, because more cars could be travelling at much lower speeds (e.g. 40-50 km/h) than at higher speeds (130-140 km/h).

3. Not at all: 2% of $360^\circ = .02 (360^\circ) = 7.2^\circ$

4. a)

Weights(kg)
1.6-1.9
2.0-2.3
2.4-2.7

b) Class mark = $(1.6 + 1.9)/2 = 1.75\text{kg}$.

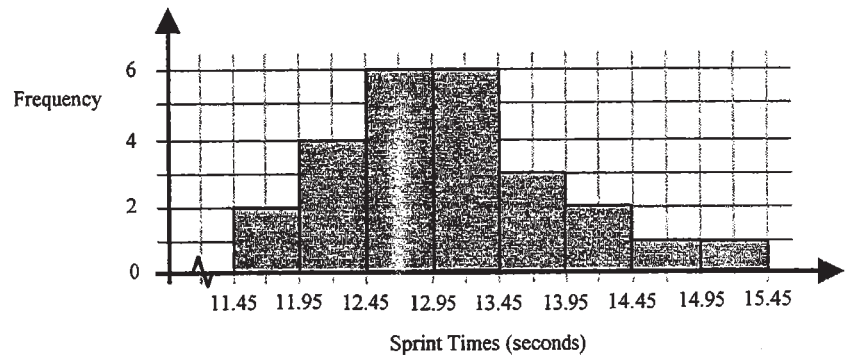
5. a) discrete

c) r.f. = $6/25 = .24$

b)

Sprint Times	Frequency
11.5 - 11.9	2
12.0 - 12.4	4
12.5 - 12.9	6
13.0 - 13.4	6
13.5 - 13.9	3
14.0 - 14.4	2
14.5 - 14.9	1
15.0 - 15.4	1
Total	25

d) Sprint Times (sec.)



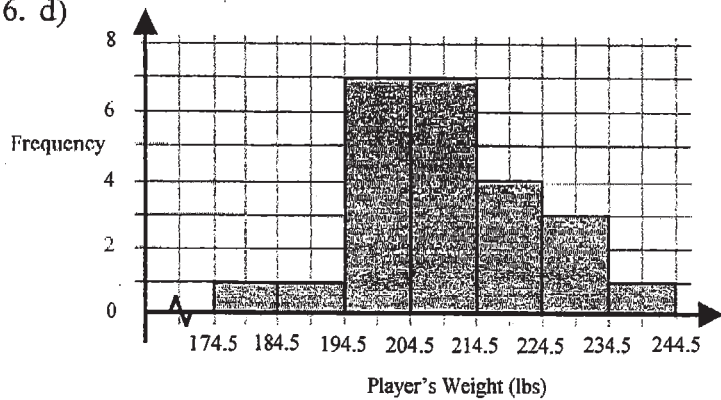
6. a)

Weights(lbs)	Frequency
175 - 184	1
185 - 194	1
195 - 204	7
205 - 214	7
215 - 224	4
225 - 234	3
235 - 244	1
Total	24

b) 174.5, 184.5 lbs.

c) $(235 + 244)/2 = 239.5$ lbs.

6. d)



e)

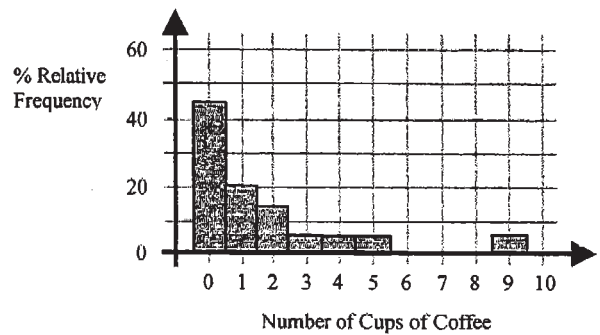
Stem	Leaves
17	5
18	1
19	05
20	5485000500
21	0005
22	050055
23	5

Stem = Tens
Leaf = Ones

7. a)

Cups of Coffee	Frequency
0	9
1	4
2	3
3	1
4	1
5	1
6	0
7	0
8	1
Total	20

b)



8. a) $9\% \text{ of } 360^\circ = .09(360^\circ) = 32.4^\circ$

b) 44%

9. a) (i) continuous (ii) discrete

b) (i) ordinal (ii) interval

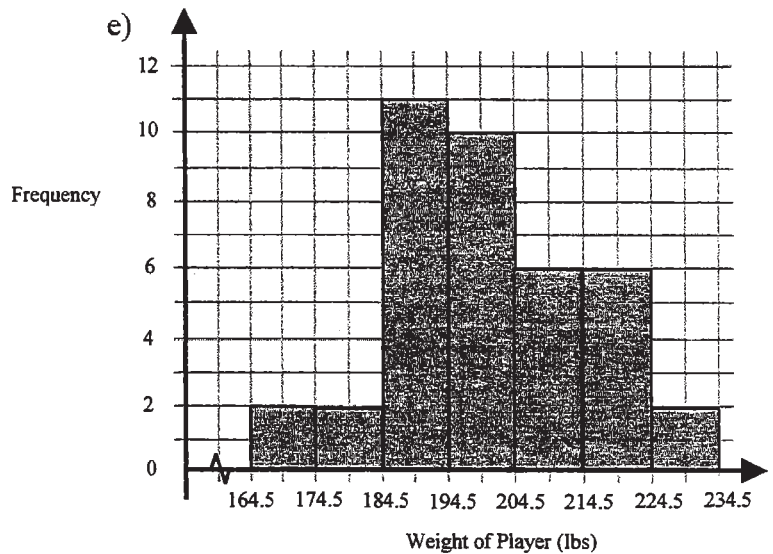
(iii) ratio

c)

Weights	Frequency
165 - 174	2
175 - 184	2
185 - 194	11
195 - 204	10
205 - 214	6
215 - 224	6
225 - 234	2
Total	39

d) $(165 + 174)/2 = 169.5$

e)



10. a) 3

b) I would pick the histogram that is skewed right (1), because if the average age of women getting married is 25 years, say, there will be no ages below a certain value like 15 (or perhaps 12??) years, whereas the upper ages are possible (some women are getting married at 45, 55, 75?? years of age).

11. a) 0.5 kg

b) 2.25, 2.75 kg

12.

Stem	Leaves
0	79
1	6847
2	3875
3	265
4	1
5	6

Earthquake Magnitudes
(Richter Scale)
Stem = Units
Leaf = Tenths

13. a)

Study Hours	Frequency
0 - 2	1
2.5 - 4.5	5
5 - 7	6
7.5 - 9.5	6
10 - 12	1
12.5 - 14.5	0
15 - 17	1
Total	20

b) 14.75, 17.25

c) $(2.5 + 4.5)/2 = 3.5$ hrs.

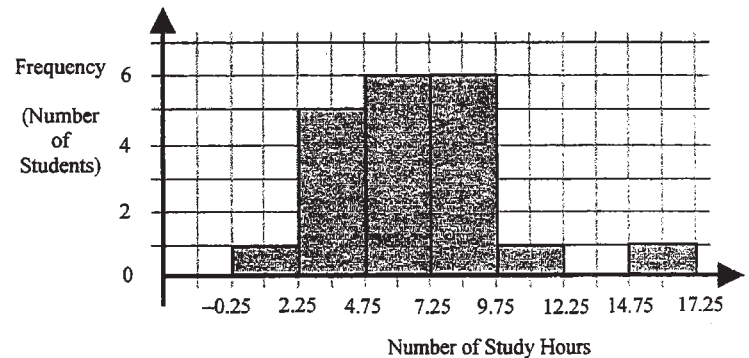
d) 2.5 hours

e)

f) Study Hours

Stem	Leaf
2	0
3	5
4	0550
5	00
6	00
7	00
8	00000
9	0
10	
11	
12	0
13	
14	
15	0

Stem = Units
Leaf = Tenths



14. a) Range = $122 - 85 = 37$

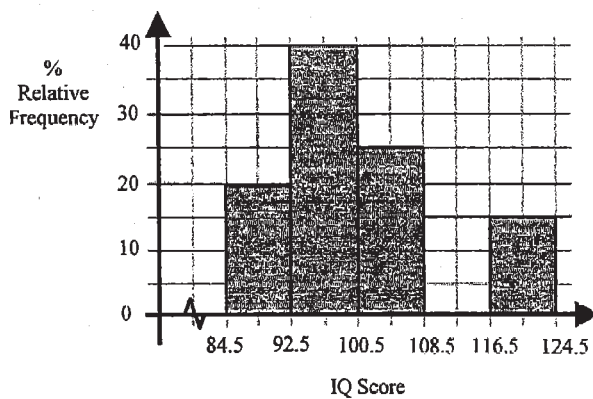
b) Class Width $\approx \frac{37}{5} = 7.4$

Choose 8 for CW (there are other possibilities)

c)

Class	Tally	Frequency	Rel. Freq. (%)	Cum. Rel. Freq. (%)
85 - 92	IIII	4	20	20
93 - 100	IIII III	8	40	60
101 - 108	IIII	5	25	85
109 - 116		0	0	85
117 - 124	III	3	15	100
Total		20	100	

d)



e)

Class mark
 $= \frac{(109 + 116)}{2}$
 $= 112.5$

15. a) ordinal

b) 49%

c) $31\% \text{ of } 360^\circ = 0.31 (360^\circ) = 111.6^\circ \approx 112^\circ$

16. a)

Sleep Hours	Frequency
3.0 - 4.0	3
4.5 - 5.5	1
6.0 - 7.0	7
7.5 - 8.5	3
9.0 - 10.0	5
10.5 - 11.5	1
Total	20

b) 2.75, 4.25 hrs.

c) Class mark = $\frac{(10.5 + 11.5)}{2} = 11$ hrs.

d) 1.5 hours

e)

f)

Stem	Leaves
3	5
4	00
5	5
6	555
7	05000
8	00
9	00005
10	5

Stem = Units
 Leaf = Tenths

