

**CHAPTER 3 REVIEW**

Name: Key

1. A random sample of <sup>20</sup> 18 airline carry-on luggage bags had the following weights (rounded to the nearest pound).

12 25 10 38 15 19 8 15 17 15  
41 7 22 10 19 12 16 5 14 15

Find the mean, median, and mode of these weights.

1.  $\bar{x} = 16.75$  Med = 15 Mode = 15

2. Find the mean and the 5% trimmed mean for the following annual salaries (in thousands) of employees in a small company. Which is most representative of the average annual salary? Why?

38.5 31.0 29.8 37.4 40.1 35.1 41.5  
34.2 38.6 187.4 40.6 39.7 31.0 29.8  
12.6 39.7 28.4 42.0 30.8 35.5 26.9

2.  $\bar{x} = 35.29$

3. A sample of 10 northern pike from Taltson Lake had the following lengths (rounded to the nearest inch).

21 27 46 35 41 36 25 23 34 48  
21

- (a) Find the range.  
(b) Find the sample mean.  
(c) Find the sample variance.  
(d) Find the sample standard deviation.

3. (a) 27  
(b) 33.6  
(c) 90.25  
(d) 9.50

4. A random sample of receipts for individuals eating at an Applebee's Restaurant had a sample mean of  $\bar{x} = \$11.38$  and a sample standard deviation  $s = \$2.15$ .

- (a) Compute the coefficient of variation for this data.  
(b) Use Chebyshev's theorem to find the smallest interval centered on the mean in which we can expect at least 75% of meal receipts to fall.

4. (a) 18.8970

(b) 7.08 - 15.68

$CV = \frac{2.15}{11.38} \cdot 100$

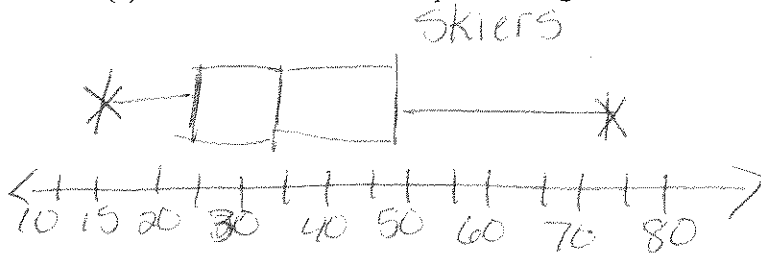
$11.38 - 2(2.15)$

1	5	6	8	9	9		
2	2	3	4	5	6	9	9
3	2	3	7	8			
4	4	6	7	9			

5. A random sample of 27 skiers at a Vail, Colorado ski resort gave their ages. The results were

18	25	32	16	41	52	29	58	23
62	47	56	19	22	38	15	46	33
49	52	37	26	72	44	19	24	29

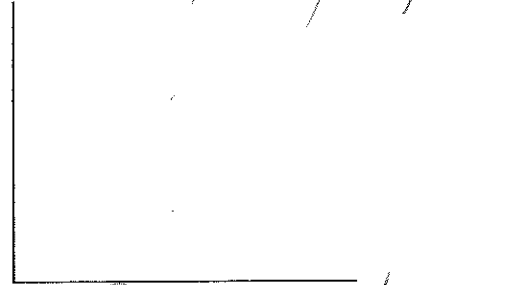
- (a) Give the five number summary.
- (b) Create a box-and-whisker plot for the given data.



(c) Find the interquartile range.

5. (a)  $15, 23, 33, 49, 72$

(b)



(c)  $49 - 23 = 26$

6. In Biology 340, weights are assigned to assignments as follows:

- Research project, 25%
- Exam 1, 15%
- Exam 2, 15%
- Exam 3, 15%
- Final exam, 30%

75	.25
85	.15
95	.15
90	.15
88	.30

Each assignment is graded on a 100 point scale. Gary earned 75 points on the project, 85 points on exam 1, 95 points on exam 2, 90 points on exam 3, and 88 points on the final exam. Compute his weighted average in the Biology 340 class.

6.  $85.65\%$

7. Sophia took the SAT and scored in the 79<sup>th</sup> percentile. What percentage of the scores were at or below her score? What percentage were above?

7. at ~~79%~~ <sup>81%</sup> or below  
~~80%~~ or higher were <sup>79%</sup>  
 ABOVE  
 (21%)

1	5, 6, 8, 9, 9
2	2, 3, 4, 5, 6, 9, 9
3	2, 3, 7, 8
4	4, 4, 6, 7, 9
5	2, 2, 6, 8
6	2, 2

8. A college registrar recorded the number of students receiving a grade of *Incomplete*. Results for the past 24 quarters are below.

28 47 19 58 63 77 53 39  
 42 81 62 67 71 59 48 56  
 63 32 46 57 93 35 75 48

Classwidth

(24)

$$93 - 19 = 74$$

$$\frac{74}{5} = 14.8$$

$$= 15$$

(a) Make a frequency table with five classes, showing class boundaries, class midpoints, frequencies, relative frequencies, and cumulative frequencies.

Class Limits	Class Boundaries	Frequency	Relative Frequency
19-33	18.5-33.5	3	$\frac{3}{24} = \frac{1}{8} = 0.125 = 12.5\%$
34-48	33.5-48.5	17	$\frac{17}{24} = 0.708 = 70.8\%$
49-63	48.5-63.5	11	$\frac{11}{24} = 0.458 = 45.8\%$
64-78	63.5-78.5	4	$\frac{4}{24} = \frac{1}{6} = 0.167 = 16.7\%$
79-93	78.5-93.5	2	$\frac{2}{24} = \frac{1}{12} = 0.083 = 8.3\%$

Students Receiving Incompletes

(b) Draw a relative frequency histogram from the information in part (a).

