

8.1

HWK

8-8)

(a) 33 45 60 67 77 84 89 96 97 98 100 100 100

Stem	Leaf
3	3
4	5
5	0 7
6	0 7
7	7 7
8	4 9 9 8
9	6 7 8
10	0 0 0

Key: 2|1 means 21

(b) Median = 89

Q1 = 63.5

Q3 = 99

8-9)

(a)  $-\frac{4}{5} + \frac{7}{12}$   
 $-\frac{48}{60} + \frac{35}{60}$   
 $(-\frac{13}{60})$

(b)  $\frac{5}{9} + (-\frac{1}{4})$   
 $\frac{20}{36} + (-\frac{9}{36})$   
 $\frac{11}{36}$

(c)  $-\frac{3}{7} \cdot \frac{11}{12}$   
 $-\frac{33}{84} = (-\frac{11}{28})$

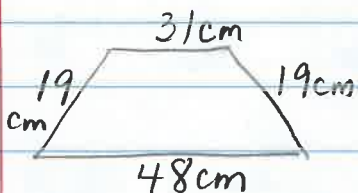
(d)  $-1\frac{2}{3} \cdot \frac{4}{5}$   
 $-\frac{5}{3} \cdot \frac{4}{5}$   
 $-\frac{20}{15} = -1\frac{4}{3} = (-1\frac{1}{3})$

$$\begin{aligned}
 8-10) \quad a) \quad & 3(2x-1) + 2 = 5x \\
 & 6x - 3 + 2 = 5x \\
 & 6x - 1 = 5x \\
 & \begin{array}{r} -6x \quad -6x \\ \hline (-1) - 1 = -x(-1) \\ 1 = x \end{array}
 \end{aligned}$$

$$\begin{aligned}
 b) \quad & 600x + 200 = 500x \\
 & \begin{array}{r} -600x \quad -600x \\ \hline 200 = -100x \\ -100 \quad -100 \\ \hline -2 = x \end{array}
 \end{aligned}$$

$$8-11) \quad \begin{array}{c} x+12 \\ \diagup \quad \diagdown \\ x \quad \quad x \\ \diagdown \quad \diagup \\ 3x-9 \end{array} \quad \text{perimeter} = 117 \text{ cm}$$

$$\begin{aligned}
 117 &= x + x + x + 12 + 3x - 9 \\
 117 &= 6x + 3 \\
 -3 & \quad \quad -3 \\
 \hline
 114 &= 6x
 \end{aligned}$$

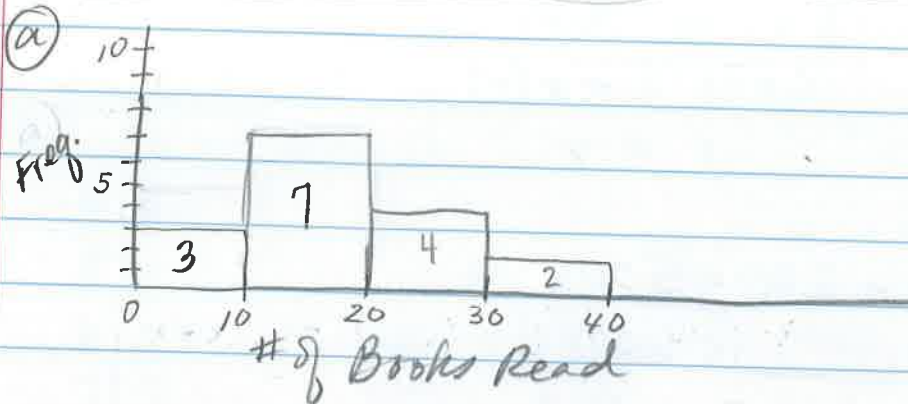
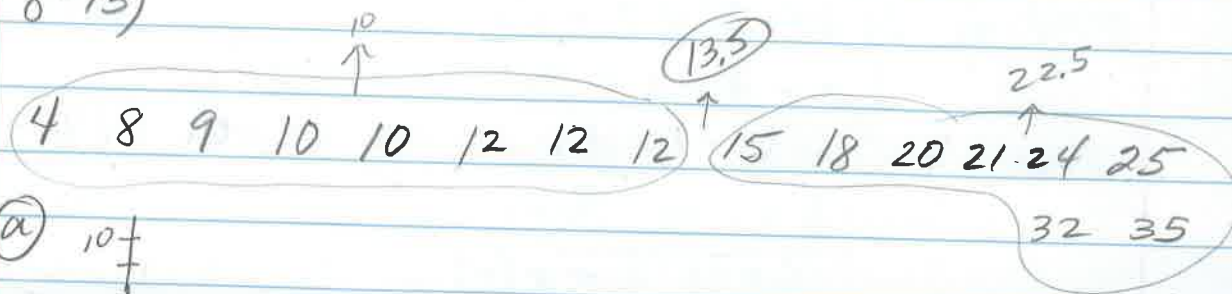


$$\begin{aligned}
 114 &= 6x \\
 6 & \quad \quad 6 \\
 \hline
 19 &= x
 \end{aligned}$$

8-12)

Taffy #	4	16	8	80	24	32	40
Cost \$	0.25	\$1.00	50¢	\$5.00	\$1.50	\$2.00	\$2.50

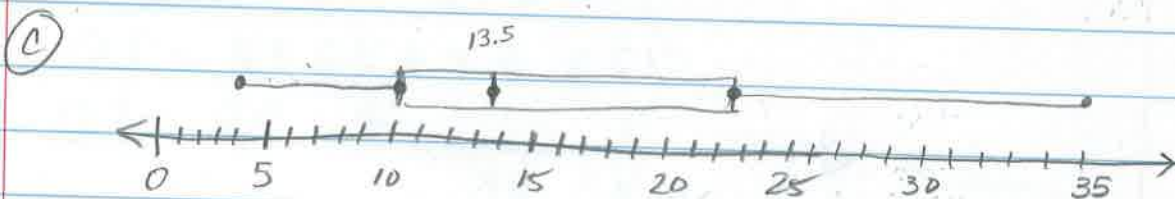
8-13)



(b) The data is nearly symmetric with no outliers so either mean or median are appropriate.

Mean = 16.69 books

Median = 13.5 books



The typical student reads about 13.5 books; the distribution is nearly symmetrical and single-peaked; some students may say there is a slight right skew, apparent in the box plot; the IQR is 12.5 so there is a lot of variability in the number of books read; there are no apparent outliers

8-14)

$$\textcircled{a} \begin{array}{ccc} & \frac{9}{10} & \\ \frac{1}{5} & \times & \frac{3}{4} \\ & \frac{39}{20} & \end{array}$$

$$\textcircled{b} \begin{array}{ccc} & \frac{2}{15} & \\ \frac{2}{5} & \times & \frac{1}{3} \\ & \frac{11}{15} & \end{array}$$

$$\textcircled{c} \begin{array}{ccc} & \frac{4}{14} & \\ -\frac{4}{7} & \times & -\frac{1}{2} \\ & -\frac{15}{14} & \end{array}$$

$$\textcircled{d} \begin{array}{ccc} & -\frac{2}{9} & \\ \frac{1}{3} & \times & -\frac{2}{3} \\ & -\frac{1}{3} & \end{array}$$

8-15)

$$\textcircled{a} \begin{array}{r} 5x + 20 = 3x + 4 \\ -3x \quad -3x \\ \hline 2x + 20 = 4 \\ -20 \quad -20 \\ \hline 2x = -16 \\ \frac{2x}{2} = \frac{-16}{2} \\ x = (-8) \end{array}$$

$$\textcircled{b} \begin{array}{r} 7x - 4 = 3x + 8 \\ -3x \quad -3x \\ \hline 4x - 4 = 8 \\ +4 \quad +4 \\ \hline 4x = 12 \\ \frac{4x}{4} = \frac{12}{4} \\ x = 3 \end{array}$$

$$\textcircled{c} \begin{array}{r} 2x + 6 = x - 9 \\ -x \quad -x \\ \hline x + 6 = -9 \\ -6 \quad -6 \\ \hline x = (-15) \end{array}$$

8-16) 1 cup milk (measured) 10 times and got a mean of 294.6 mg  
 1 cup typically has 290 mg. (actual)

$$\begin{array}{r} 294.6 \\ - 290 \\ \hline 4.6 \end{array}$$

$$\frac{4.6}{290} = 0.015 \times 100 = \underline{1.6\%}$$

$$8-17) \frac{5 \text{ songs}}{\$6} = \frac{7 \text{ songs}}{x}$$

$$5x = \frac{42}{5}$$

$$x = \$8.40$$

8-18) 6 red, 4 blue, 3 white, 7 green  
(20 total)

$$a) P(\text{red, red}) = \frac{\frac{6}{20} \cdot \frac{6}{20}}{\frac{3}{10} \cdot \frac{3}{10}} = \frac{9}{100} = 9\%$$

$$b) P(\text{not white, green}) = \frac{\frac{17}{20} \cdot \frac{7}{20}}{\frac{119}{400}} = 29.75\%$$

$$c) P(\text{blue or white, red}) = \frac{\frac{7}{20} \cdot \frac{6}{20}}{\frac{42}{400} = \frac{21}{200}} = 10.5\%$$

$$d) P(\text{red, red}) \text{ NOT REPLACING} \\ \frac{\frac{6}{20} \cdot \frac{5}{19}}{\frac{30}{380} = \frac{15}{190}} = 7.9\%$$