

Ch. 3 Review

Note Title

10/3/2017

1) a) $\bar{x} = 918.78$

b) $\tilde{x} = 928$

c) $\text{mode} = 936$

d) $\text{midrange} = (936 + 878) / 2 = 907$

e) $\text{range} = 936 - 878 = 58$

f) $s = 23.04$ i) $Q_3 = 935$

g) $s^2 = 530.84$

h) $Q_1 = 901.5$

$$2) \quad z = \frac{x - \bar{x}}{s} = \frac{878 - 918.78}{23.04} = -1.770$$

$-2 < -1.770 < 2 \Rightarrow \text{usual}$

3)



skew to the left

Not Normal Distribution

$$4) \quad \text{SAT:} \quad z = \frac{1030 - 1518}{325} = -1.502$$

$$\text{ACT:} \quad z = \frac{14 - 21.1}{4.8} = -1.479$$

ACT score is better

$$5) \quad \min = 1, \quad \max = 15$$

$$s \approx \frac{\text{range}}{4} = \frac{15-1}{4} = 3.5$$

$$6) \quad \bar{x} = 97.5 \quad x = 87.8 \quad s = 6.9$$

$$z = \frac{x - \bar{x}}{s} = \frac{87.8 - 97.5}{6.9} = -1.406$$

$$-2 < -1.406 < 2 \Rightarrow \text{usual}$$

7)

Midpoint (x)	f
4999.5	46
14999.5	90
24999.5	40
34999.5	7
44999.5	3
L3	L4

$$\bar{x} = \frac{\text{sum}(L3 * L4)}{\text{sum}(L4)}$$

$$= 15913.48$$

$$\bar{x} = \frac{\sum fx}{\sum f}$$

$$8) \quad L = \frac{k}{100} \cdot n = \frac{22}{100} \cdot 40 = 8.8 \approx 9$$

data value = 57

9) 5 # summary:

$\min = 30$, $Q_1 = 58$, $Q_2 = 72$, $Q_3 = 81$, $\max = 125$

$$IQR = Q_3 - Q_1 = 81 - 58 = 23$$

$$Q_1 - 1.5 IQR = 58 - 1.5(23) = 23.5$$

$$Q_3 + 1.5 IQR = 81 + 1.5(23) = 115.5$$

125 is the only outlier



$$\frac{241}{422} = 57 \text{ th percentile}$$

Grade	Credit Hr
1	4
3	5
4	1
3	5

$$\frac{1.4 + 3.5 + 4.1 + 3.5}{4 + 5 + 1 + 5} = \frac{38}{15}$$

(14) $S = 12$, $\bar{X} = 138$ $68 - 95 - 99.7$

$$\bar{X} + S = 138 + 12 = 150 \quad 68\%$$

$$\bar{X} + S = 138 + 12 = 150$$

$$15) \quad \bar{x} = 79 \quad s = 8, \quad x = 72$$

$$z = \frac{x - \bar{x}}{s} = \frac{72 - 79}{8} = -0.875$$

0.875 stdev below the class mean

$$16) \quad z = 1.7 \quad \bar{x} = 14, \quad s = 3$$

$$x = ?$$

$$z = \frac{x - \bar{x}}{s} =$$

$$\frac{x - 14}{3} = 1.7$$

→ solve equation

$$x - 14 = 3(1.7) \quad x - 14 = 5.1$$

$$x = 19.1$$