6.1 - 5

a

odds of winning = 18/38

odds of losing = 20/38

Find the Sample mean & sample Standard deviation

$$\text{mean} = \frac{1}{100}\sum x_i$$

$$s^2 = \frac{1}{99}\sum (x_i - \bar{x})^2$$

$$s = \sqrt{s^2}$$

Mean = 112.12

$s = 231.3576$

bucket 150 units wide.

$$h = \frac{f_0}{100(50)} =$$

[0.5 - 50.5) → 52 → .104

[50.5 - 100.5) → 28 → .056

[100.5 - 150.5) → 6 → .012

[150.5 - 200.5) → 1 → .002

[200.5 - 250.5) → 2 → .004

[250.5 - 300.5) → 0 → 0

[300.5 - 350.5) → 1 → .02

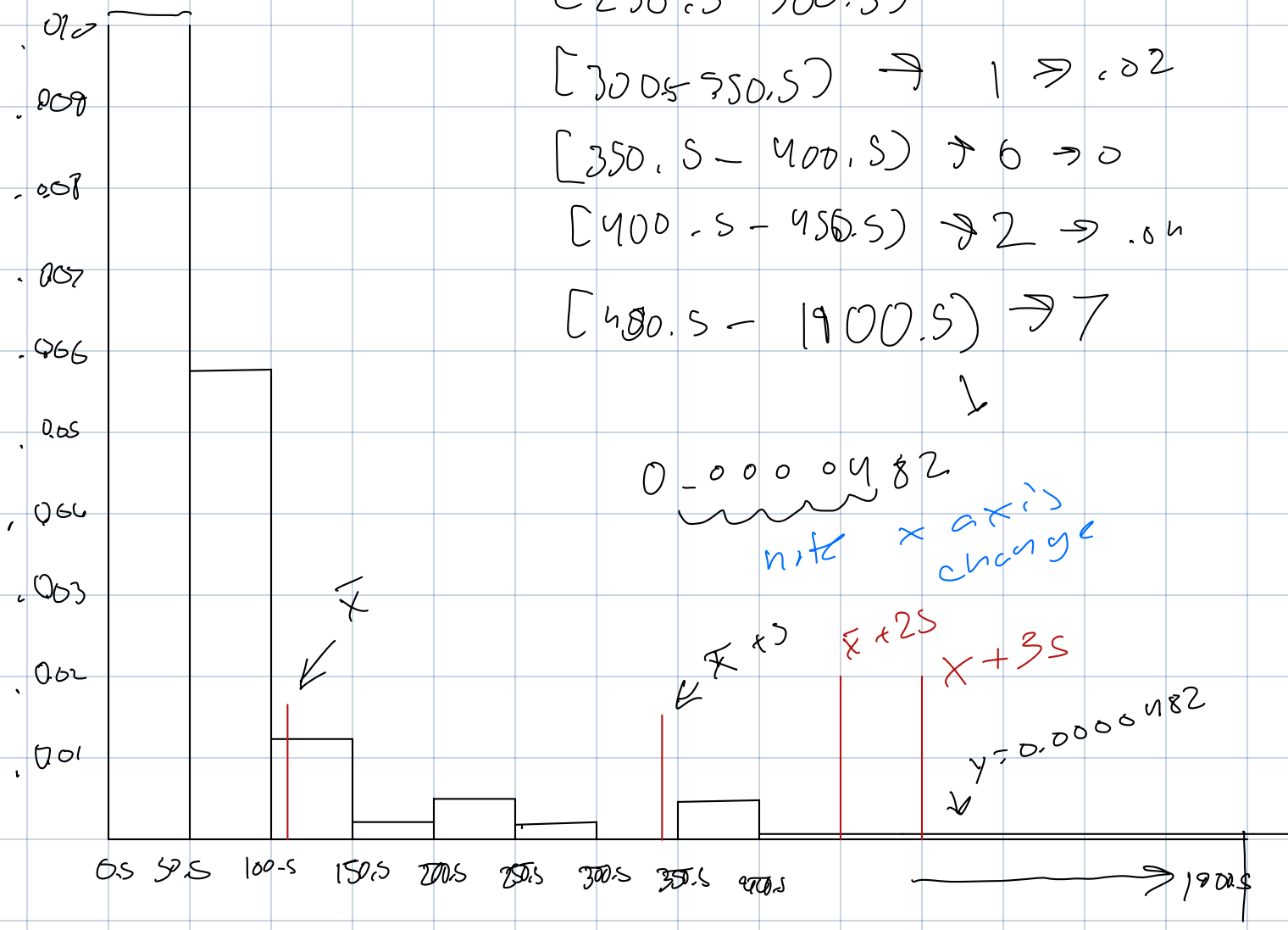
[350.5 - 400.5) → 6 → 0

[400.5 - 450.5) → 2 → .04

[450.5 - 1900.5) → 7

↓

0.0000482



not x axis change

$\bar{x}-s$, $\bar{x}-2s$, $\bar{x}-3s$ < 0

d) Median in both decr. of outlier

6.2-6 $P(1) = \frac{18}{38}$ $P(-1) = \frac{20}{38}$

50th percentile = 9.0

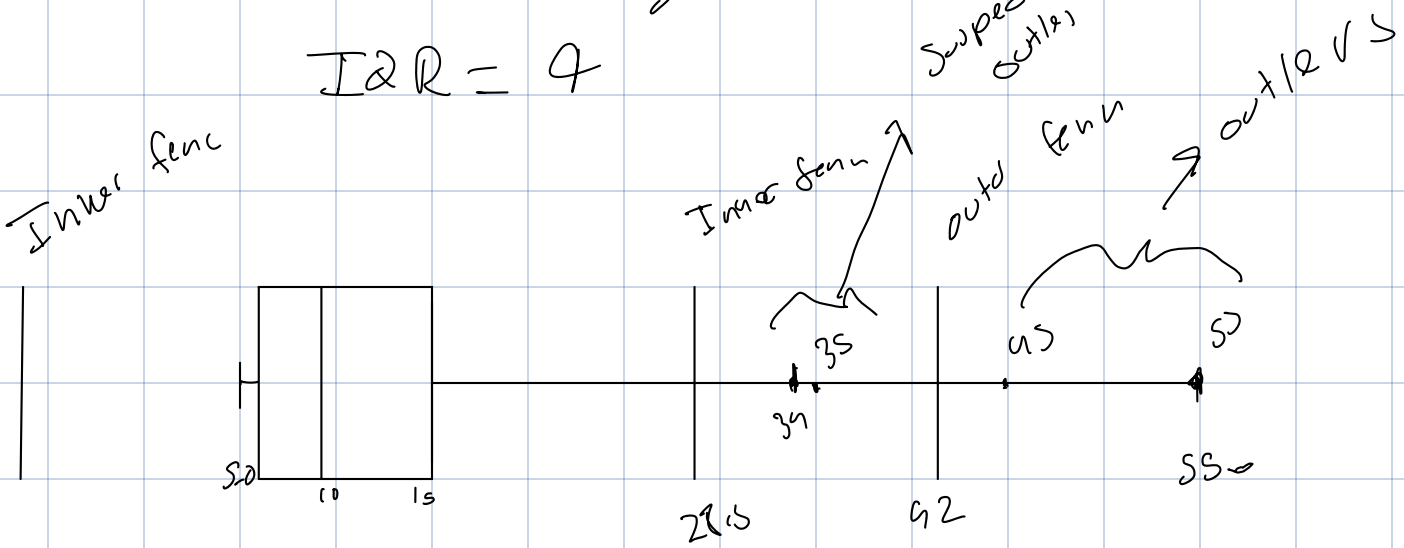
25th percentile = 6.0

75th percentile = 15.0

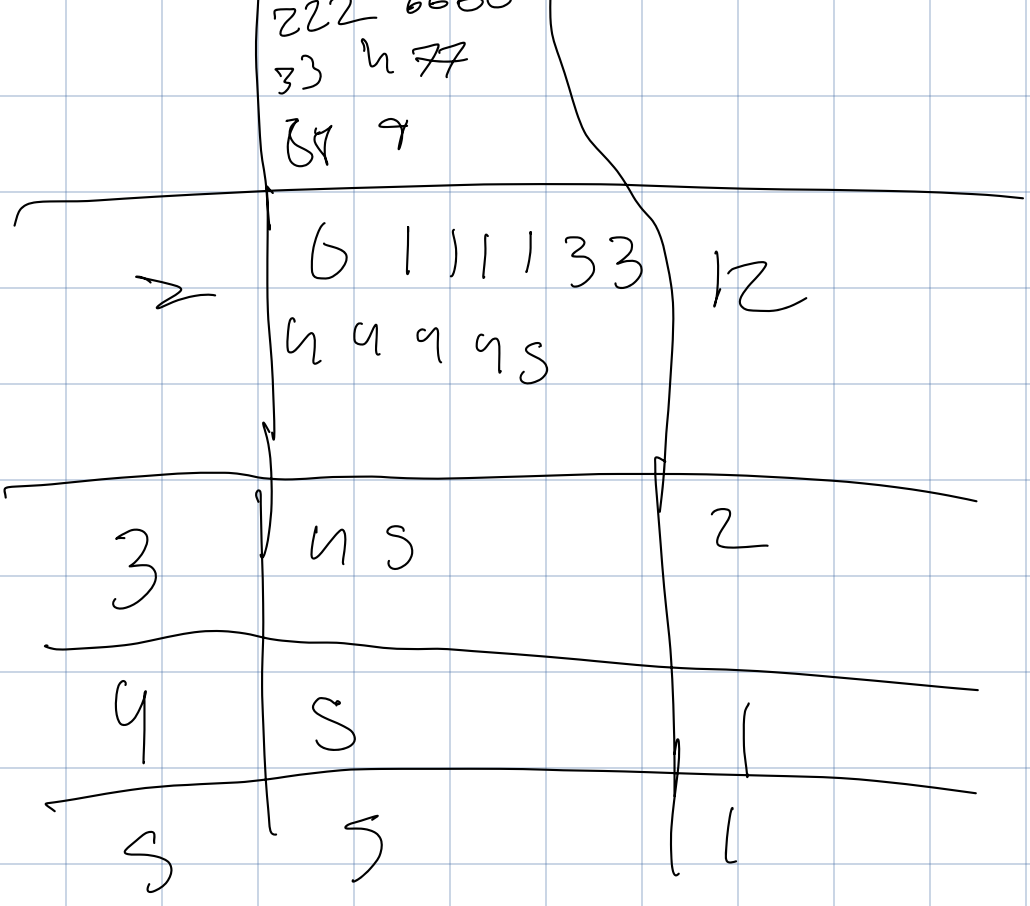
min = 5

max = 55

IQR = 9



Stems	Leaves	f
0	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 7 7 7 7 7 7 8 8 8 8 8 8 8 9 9 9 0 0	53
1	0 0 0 0 0 0 1 1 1 1 1 1 1 5 5 5 5	22



90th percentile $= (101)\ 0.9$

$= 90.9$

$= \boxed{22.8}$

6.2-8

105.9, 106.9

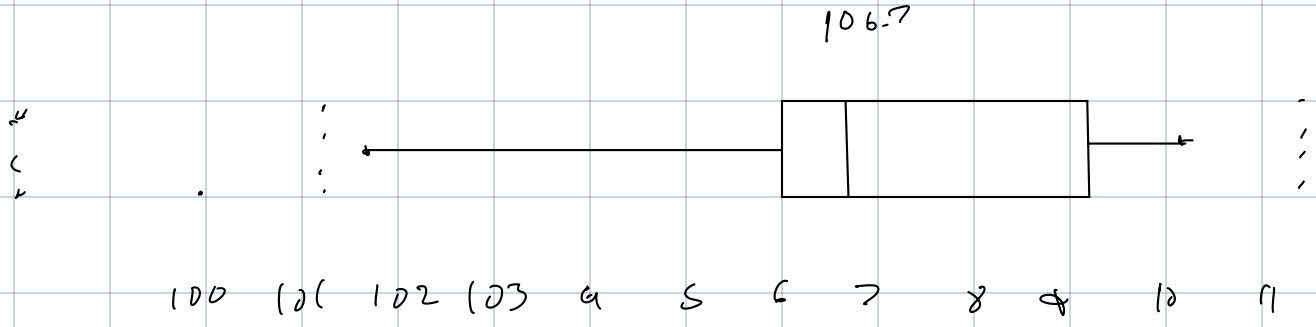
b)

min 101.7
max 110.2
Median 106.7
25th 106
75th 109.2

IQR = 3.2

$\frac{3}{2} \cdot 3.2 = 4.8$

$3 \cdot 3.2 = 9.6$



c) no outliers or suspected outliers

6.3-5

$\pi_{0.7} = 27.3$

$P(Y_2 < 27.3)$

$G_7(y) = \binom{8}{7}(0.7)^7(0.3)^1 + (0.7)^8$

$= 0.25529833$

$P(Y_5 < 27.3 < Y_8)$

$= \binom{8}{5}(0.7)^5(0.3)^3 + \binom{8}{6}(0.7)^6(0.3)^2 + \binom{8}{7}(0.7)^7(0.3)$

$= 0.7482$

$\int_0^x e^{-t}\,dt = -e^{-t}\Big|_0^x = 1 - e^{-x}$

6.3-9

ple

$$g_r(y) = \frac{n!}{(r-1)!(n-r)!}\left[1-e^{-x}\right]^{r-1}\left[e^{-x}\right]^{n-r+1}$$

$$U = e^{-Y_r}$$

$$Y_r = -\ln(U)$$

$$f_U(u) = g_r(-\ln u)\cdot\left|\frac{1}{u}\right|$$

$$= \frac{n!}{(r-1)!(n-r)!}(1-u)^{r-1}(u)^{n-r}$$

6.3-12

7.2, 8.4, 9.7, 10.5, 10.8,
11.7, 12.8, 13.9, 15.3

$Z_{0.9} = 0.1841$

$Z_{0.8} = 0.2118$

$Z_{0.7} = 0.2420$

$Z_{0.6} = 0.2743$

$Z_{6.5} = 0.3085$

$Z_{0.4} = 0.3446$

$Z_{0.3} = 0.3821$

$Z_{0.2} = 0.4207$

$Z_{0.1} = 0.4602$

Yes They Seem normal