DAD 1 , PARTIAL 2, APRIL 2018

CASE 1

1) $R = \frac{Q_3 - Q_1}{2} = \frac{7.75 - 4}{2} = \frac{3.75}{2} = 1.875$

$Q_3 = P_{75} = 7.75$

$Q_1 = P_{25} = 4$

2) It's asymetric negative because skewness < 0 (-0.083).

CASE 2

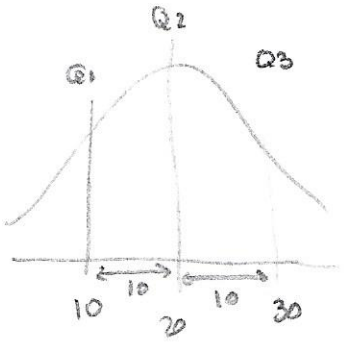
Symmetric

3) $Q = \frac{Q_3 - Q_1}{2} = \frac{30 - 10}{2} = \frac{20}{2} = 10$

$Mdn = 20 = Q_2$

$Q_1 = 10$

$S = 2$



4) $VC = \frac{S}{\bar{X}} \cdot 100 = \frac{2}{20} \cdot 100 = 10$

$\bar{X} = Mdn = Mo = 20$

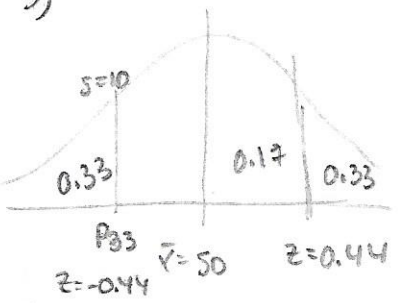
CASE 3

Normal distribution

$\bar{X} = 50$

$S = 10$

5)



← Using the standard normal distribution table, this is the z value that corresponds to a proportion of 0.17

6) $z = \dfrac{X - \bar{X}}{S}$

$-0.44 = \dfrac{P_{33} - 50}{10}$

$-4.4 = P_{33} - 50$

$50 - 4.4 = P_{33}$

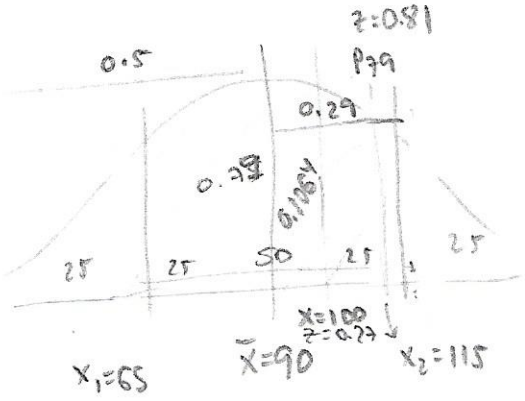
$45.6 = P_{33}$

CASE 4

Normal distribution

N = 100

S = 37.3



$115 - 65 = 50$

$65 + 25 = 90$

$\bar{X} = 90$

7) $z = \dfrac{X - \bar{X}}{S}$ $\quad 0.81 = \dfrac{P_{79} - 90}{37.3}$

$30.21 = P_{79} - 90$

$90 + 30.21 = P_{79}$

$120.21 = P_{79}$

8) $z = \dfrac{X - \bar{X}}{S} \longrightarrow z = \dfrac{100 - 90}{37.3} = \dfrac{10}{37.3} = 0.27 \longrightarrow p = 0.1064$

$0.1064 + 0.5 = 0.6064$

Approximately, 61 participants

CASE 5

N=100
s=4
CL=95% → z=1.96

a) $\sigma_{\bar{x}} = \frac{s}{\sqrt{n-1}} = \frac{4}{\sqrt{99}} = \frac{4}{9.95} = 0.4$

10) $E = z_{\alpha/2} \cdot \sigma_{\bar{x}} = 1.96 \cdot 0.4 = 0.78$