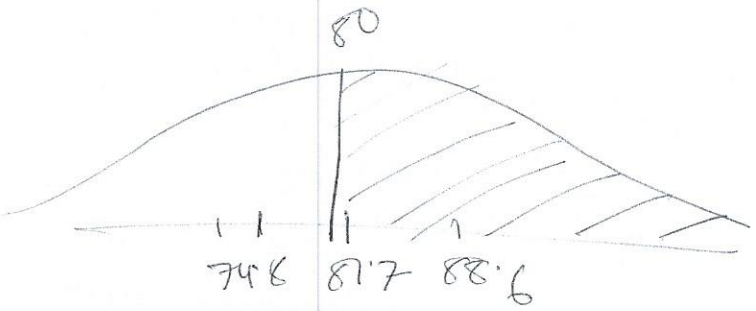
07/26/2009

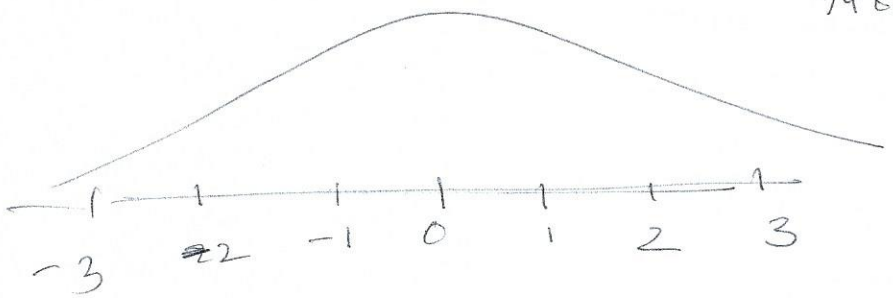
Ex. 1

$\mu = 81.7$

$\sigma = 6.9$

$P(X > 80)$





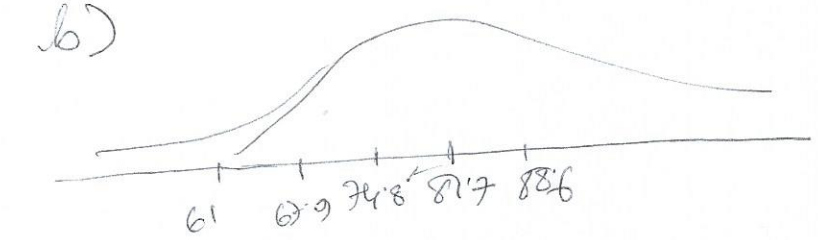
$X = 80$

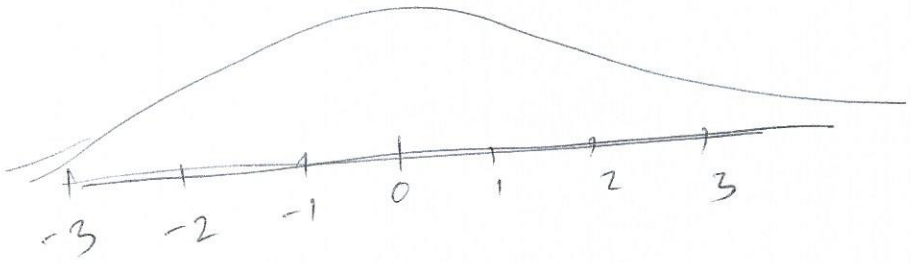
$$Z = \frac{80 - 81.7}{6.9}$$

$$P(X > 80) = P(Z > -0.25) = 1 - 0.4013 = 0.5987$$

The probability that a randomly selected medical resident works more than 80 hrs per week is 0.5987 (59.87%).

6)

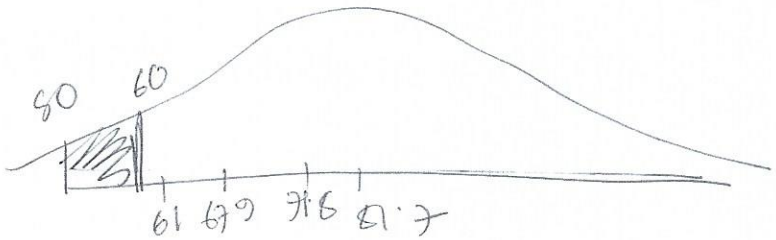




$$z = \frac{60 - 81.7}{6.9} \approx -3.14$$

$$P(x < 60) = P(z < -3.14) = .0008$$

The prob that a randomly selected med res work less than 60/week is 0.0008 (.08%).



$$z_1 = \frac{60 - 81.7}{6.9} \approx -3.14$$

$$z_2 = \frac{50 - 81.7}{6.9} \approx -4.59$$

$P(50 < X < 60) = P(-4.59 < Z < -3.14)$.

$= 0.0008 - 0.0002 = 0.0006$

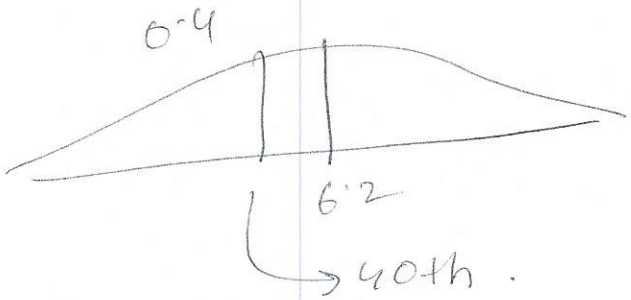
b) $x = 70$

$$Z = \frac{70 - 81.7}{6.9} \approx -1.7$$

$P(X < 70) = P(Z < -1.7) = 0.0446$

$\mu = 6.2$

$\sigma = 0.5$



Z score $= -.25$

Ex.3

a) $x = 6.2 + (-0.25) \times 0.5$

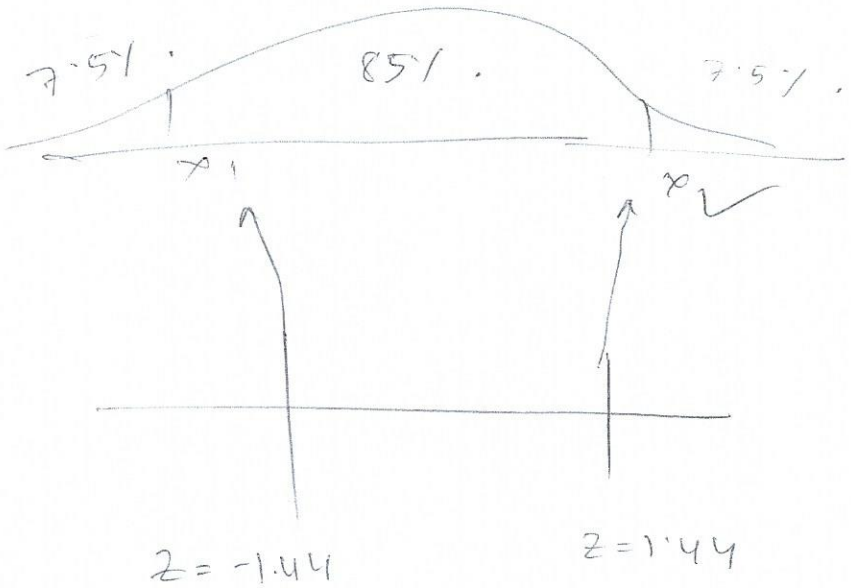
$x = 6.075$

The 40th percentile of the magnitudes in Cali is 6.075 on Richt sc.

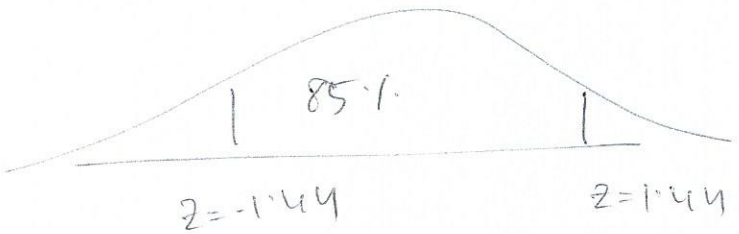
b. $X = 6.2 + 0.84 * 0.5 = 6.62$

c. $\mu = 6.2$

$\sigma = 0.5$



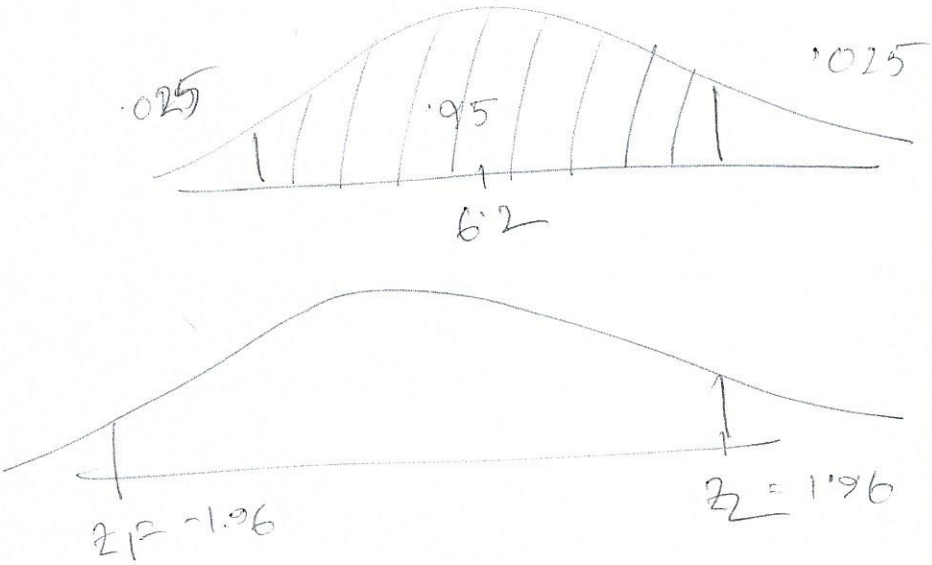
$\frac{1 - 0.85}{2} = 0.075$



$x_1 = 6.2 + (-1.44) * .5 = 5.48$

$x_2 = 6.2 + 1.44 * .5 = 6.92$

The magnitudes make up the middle 85% of earthq in cali since 1900 range between 5.48 & 6.92 by R. scale.



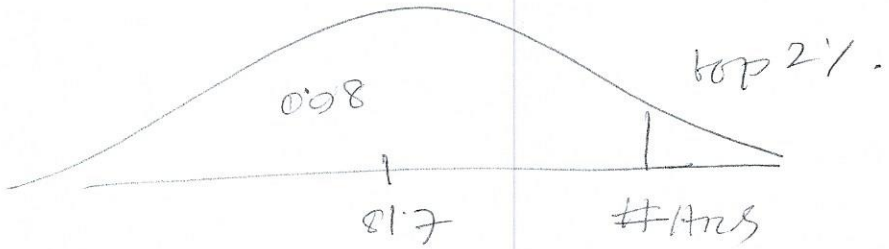
$x_1 = 6.2 + (-1.96) * 0.5 = 5.22$

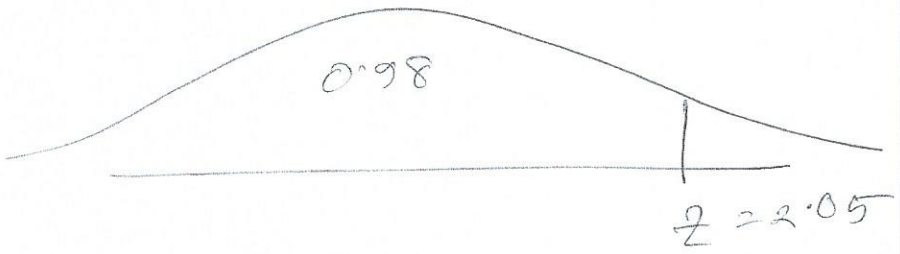
$x_2 = 6.2 + 1.96 * 0.5 = 7.18$

c) $\mu = 81.7$

$t = 6.9$

top 2%.





$x = 81.7 + 2.05 * 6.9$

$x = 96$ hrs