The Chapin Social Insight Test evaluates how accurately the subject appraises other people. In the reference population used to develop the test, scores are approximately normally distributed with mean 25 and standard deviation 5. The range of possible scores is 0 to 41.

1. If a randomly selected student has a score of 40, then how many standard deviations away from the mean is that student's score?

2. Determine the standardized value for the score of 22.

3. What is the relative frequency corresponding to a score of 25 or more?

6. What minimum score would a student need in order to score better than 77% of those taking the test?

$N(544, 103)$ $z = .74$

$z = \frac{x - \mu}{\sigma}$

$.74 = \frac{x - 544}{103}$

$(.74)(103) = x - 544$

$76.22 = x - 544$

$620.22 \approx x$

invNorm(.77)

= .73885

invNorm(%

↓

z score

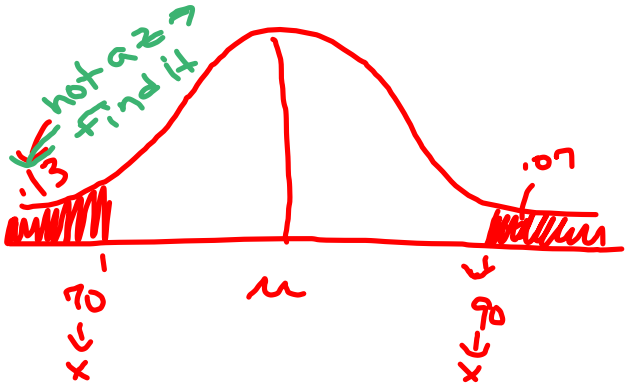
↓

critical

Mr. Myers AP Stat Test Scores are ≈ normal.

If 7% are ≥ 90 and 13% are ≤ 70.

Find μ & σ. (Involves a system of Equations)



$z_1 = \frac{x-\mu}{\sigma}$ invNorm(.13) = -1.126

$\frac{-1.126}{1} = \frac{70-\mu}{\sigma}$

$70-\mu = -1.126\sigma$ (area below 7%)

$z_2 = \frac{x-\mu}{\sigma}$ invNorm(.93) = 1.476

$\frac{1.476}{1} = \frac{90-\mu}{\sigma}$

$70-\mu = -1.126\sigma$

$-90+\mu = -1.476\sigma$

$-20 = -2.602\sigma$

$-2.602 \quad -2.602$

$7.686 = \sigma$

$(90-\mu = 1.476\sigma)-1$

$70-\mu = -1.126\sigma$

$70-\mu = -1.126(7.686)$

$70-\mu = -8.655$

$-\mu = -78.655$

$\mu = 78.655$

Ways to Ascertain Normality

① Display data in a graph
look for bell shaped, symmetrical
- histogram
- stemplot

Compare mean & median to help ≈ normal; approximately normal

② Normal Probability Plot
- last graph on the Stat plot
- takes independent variable
- look for a straight line pattern