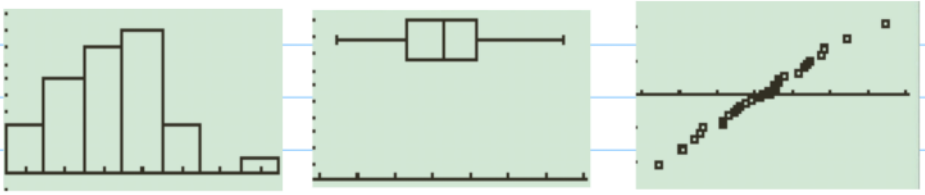
Wednesday, December 06, 2017
7:42 PM

KEY

Statistics Honors
Chapter 2 Test Review – Homework #4

1)



1) The histogram is unimodal and very roughly symmetric.
2) The boxplot is symmetric with no outliers.
3) The Normal Probability Plot is fairly linear.
4) Therefore we can conclude that the heights of the 20-29 year old men are normally distributed.

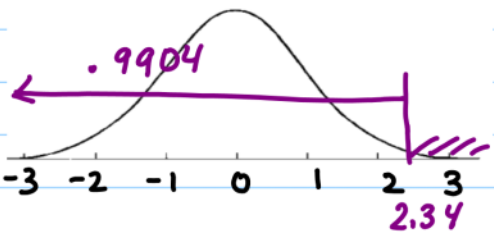
2)

$N(1017, 209)$

$z = \frac{x-\mu}{\sigma} = \frac{820-1017}{209} = -.9426$

17.36 %

3)



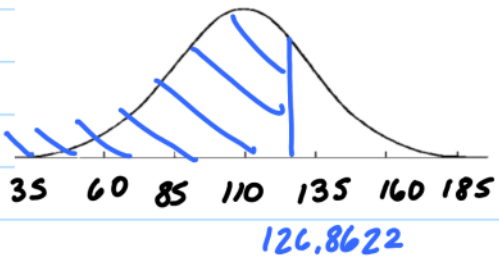
$N(531, 115)$

$z = \frac{x-\mu}{\sigma} = \frac{800-531}{115} = 2.3391 = 2.34$

$1 - .9904 = .0096$

$= .96\ \%$

4)



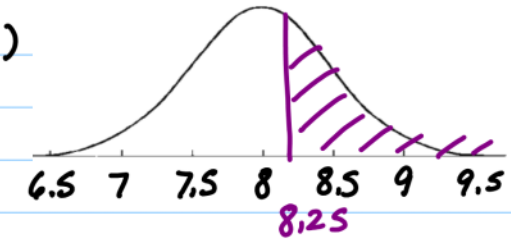
invnorm(area to left, μ, σ)

invnorm(.75, 110, 25)

= 126.8622

* top 25% = 75th percentile

5)



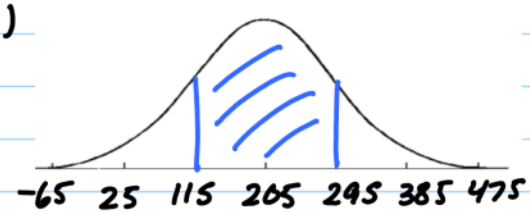
normalcdf (min, max, μ, σ)

normalcdf(8.25, 1000, 8, 0.5)

= .3085

= 30.85 %

6)



normalcdf (min, max, μ, σ)

normalcdf(115, 295, 205, 90)

= .6827

= 68.27%

OR 68% Based on the Empirical Rule

7)

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

Meghan N(82, 3)

$z = \frac{87-82}{3}$

$= 1.6667$

Nicole N(78, 2)

$z = \frac{84-78}{2}$

$= 3$

Nicole did better because she scored 3 standard deviations above the mean, where Meghan only scored 1.6667 standard deviations above the mean.

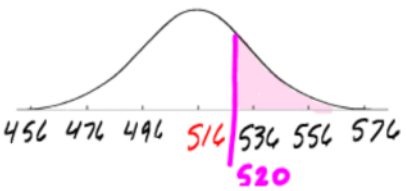
8 a) FALSE

b) TRUE 99.7% of the data is with in 3 standard deviations of the mean.

9) A

$z = \frac{x-\mu}{\sigma}$ $-1.1667 = \frac{x-18}{6}$ $6(-1.1667) = x-18$ (+18) $x = 10.9998$

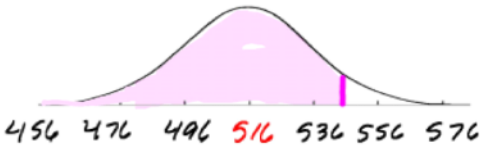
10) C



Normalcdf (min,max,mean, std dev)

Normalcdf (520,10000,516, 20) = .4207

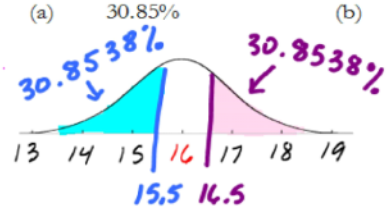
11) C



Invnorm (percentile,mean, std dev)

Invnorm (.90,516, 20) = 541.6301

12) (a) 30.85% (b) 38.30% (c) 61.70%



normalcdf (min,max, μ, σ)

normalcdf (0, 15.5, 16, 1)

normalcdf (16.5, 100, 16,1)

.308538
.308538
+
.617075
61.7075%

13) mean median

14) You scored higher than 90% of the people that took the IQ test.

15) 0, 1

16) z-score

17) a Normal PROBABILITY PLOT