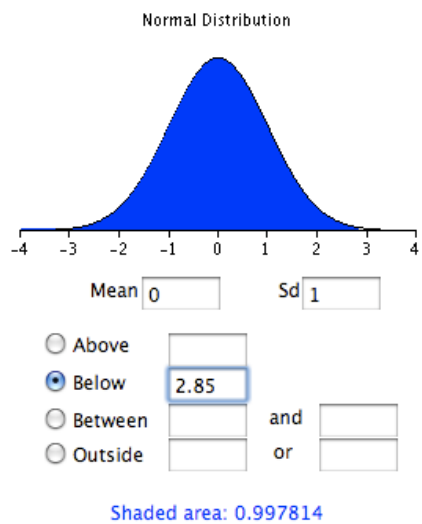


Unit 5 – The Normal Distribution
Homework #7 (Unit 5 – Normal part 1 of 2)

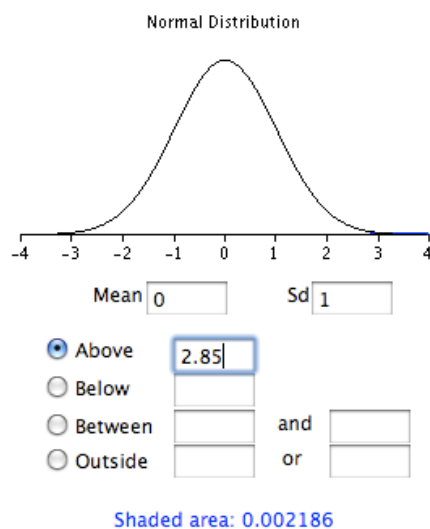
SOLUTIONS

Notes – I used http://davidmlane.com/hyperstat/z_table.html

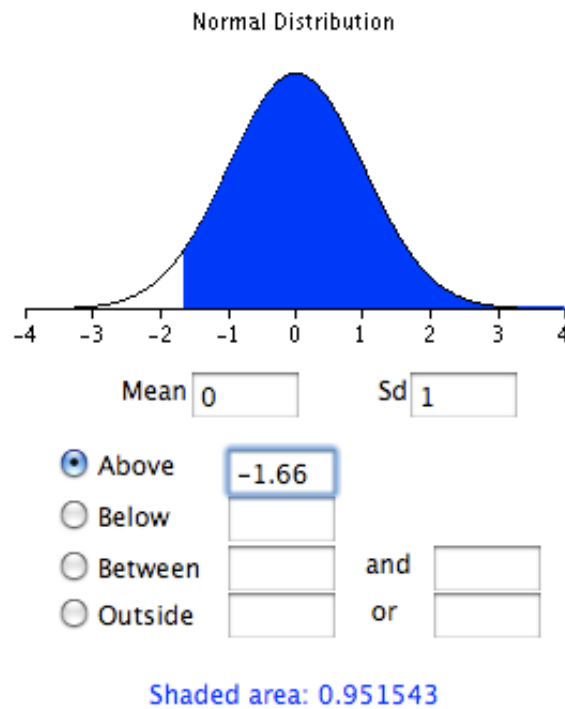
#1a. $\Pr(Z < 2.85) = .9978$



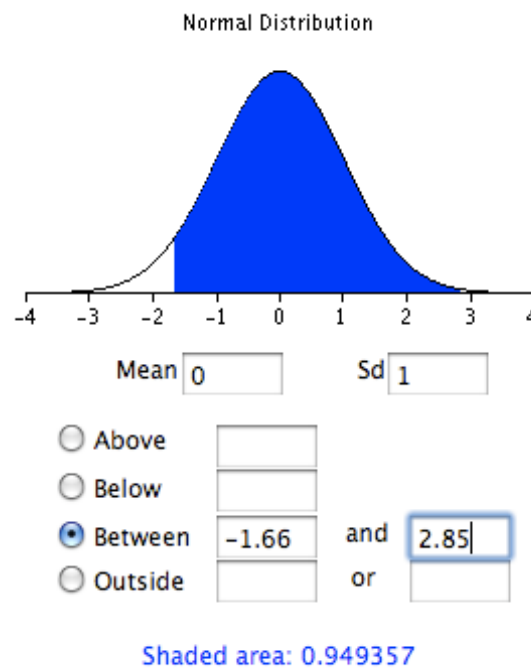
#1b. $\Pr(Z > 2.85) = .0022$



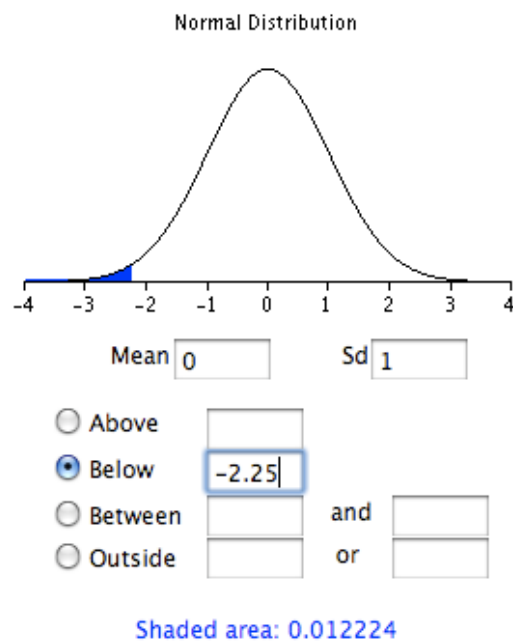
#1c. $\Pr(Z > -1.66) = .9515$



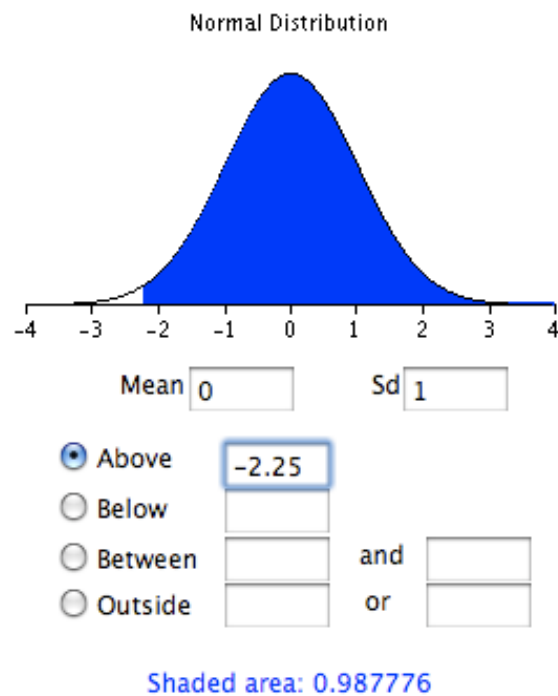
#1d. $\Pr(-1.66 < Z < 2.85) = .9494$



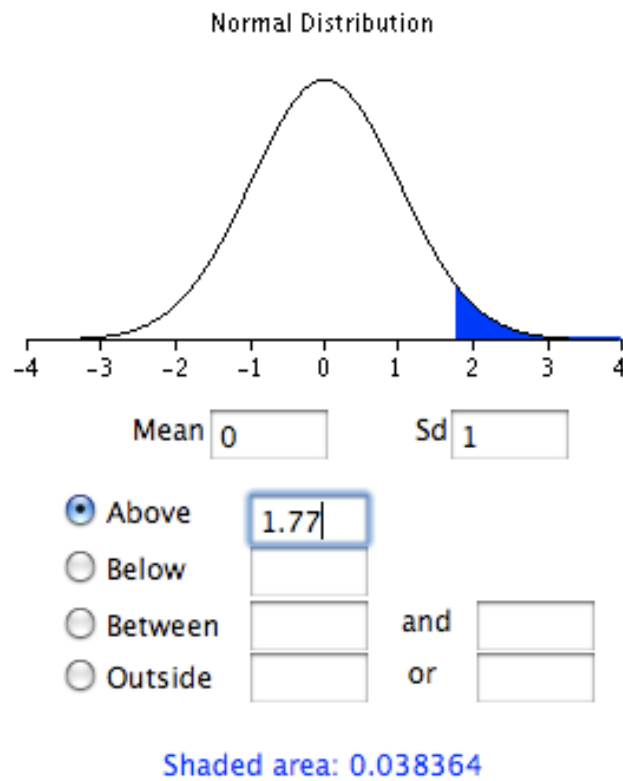
#1e. $\Pr(Z < -2.25) = .0122$



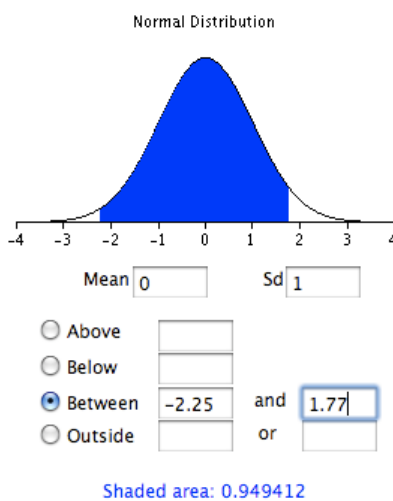
#1f. $\Pr(Z > -2.25) = .9878$



#1g. $\Pr(Z > 1.77) = .0384$

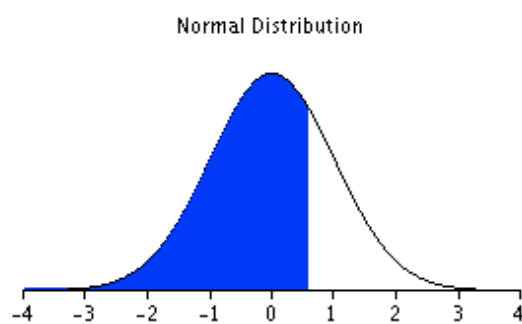


#1h. $\Pr(-2.25 < Z < 1.77) = .9494$



#2a. .7257

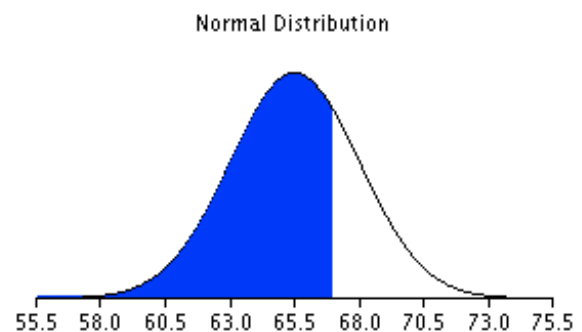
$$\begin{aligned} \text{pr}(X < 67) &= \text{pr}\left[\left(\frac{X-\mu}{\sigma}\right) < \left(\frac{67-\mu}{\sigma}\right)\right] \\ &= \text{pr}\left[Z < \left(\frac{67-65.5}{2.5}\right)\right] \\ &= \text{pr}[Z < .6] \\ &= .7257 \end{aligned}$$



Mean Sd

- ☐ Above
☒ Below
☐ Between and
☐ Outside or

Shaded area: 0.725747



Mean Sd

- ☐ Above
☒ Below
☐ Between and
☐ Outside or

Shaded area: 0.725747

#2b. .4515

$$\begin{aligned} \text{pr}(64 < X < 67) &= \text{pr}\left[\left(\frac{64-65.5}{2.5}\right) < Z < \left(\frac{67-65.5}{2.5}\right)\right] \\ &= \text{pr}[-0.6 < Z < +0.6] \\ &= .4515 \end{aligned}$$

