

Stat 101  
Summer 2023 Session 1  
Dr. Lily Yen

# Activity 4-1

Show all your work

Name: \_\_\_\_\_

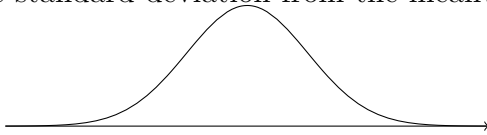
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Signature: \_\_\_\_\_

Score: \_\_\_/7

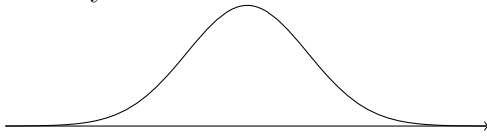
**State all Excel functions used.**

**Problem 1:** Below is a normal curve. Mark on the horizontal axis, the mean  $\mu$ , and 3 standard deviations on each side of the mean. How many percent of data is captured within one standard deviation from the mean? Two standard deviations? Three?



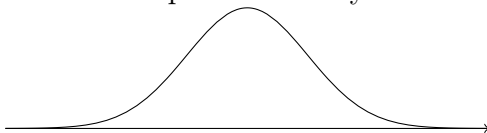
Score: \_\_\_/1

**Problem 2:** On the normal curve given below, mark on the horizontal axis its mean,  $\mu = 40$ , and standard deviation,  $\sigma = 10$ . Shade the region whose area equals  $P(X \leq 45)$ . Find the probability on Excel accurate to 6 decimal places.



Score: \_\_\_/2

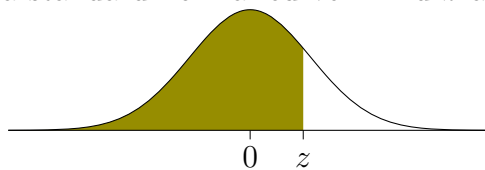
**Problem 3:** Shade on the standard normal curve the probability  $P(-0.2 < X \leq 0.3)$ . Find it to 6-decimal place accuracy on Excel.



Score: \_\_\_/1

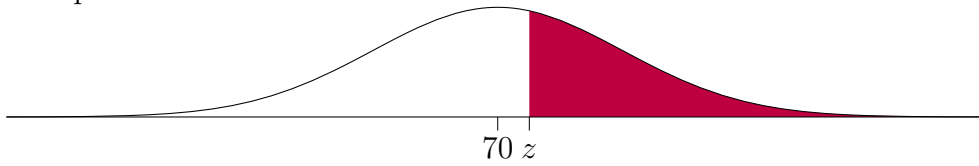
**Problem 4:** Below is a standard normal curve. Find  $z$  accurate to 6 decimal places such

that  $P(X < z) = 0.81$ .



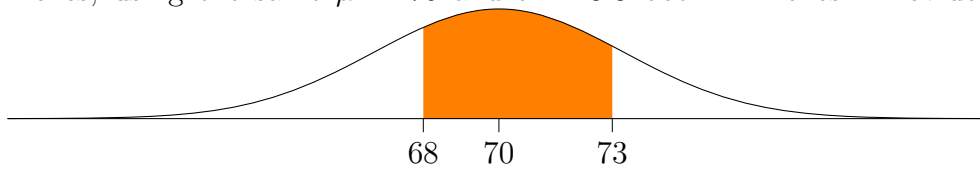
Score: \_\_\_/1

**Problem 5:** Find the cutoff height in inches for the upper 40% of men in the States. Namely, find  $z$  such that  $P(X \geq z) = 0.4$  given  $\mu = 70$  and  $\sigma = 3.3$  both in inches. Provide  $z$  to 6 decimal places.



Score: /1

**Problem 6:** Find the probability of US men with heights between 68 inches and 73 inches, using the same  $\mu = 70$  and  $\sigma = 3.3$  both in inches. Provide a 6-place accuracy.



Score: /1