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Finding the Area Under the Curve Using R - Quiz

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Question 1

1/1 point (graded)

Let $x=0.75$. Without typing into your R console. What should you get for an output of `qnorm(pnorm(0.75,lower.tail=TRUE),lower.tail=TRUE)`?

✓ Answer: 0.75

0.75

Explanation

As discussed in class, the function `pnorm(x)` takes in a value x and returns the CDF of a normal distribution at x . The function `qnorm(x)` gives the value at which the CDF of the standard normal is x . Thus applying both functions are inverses of each other, and thus applying x to the composite function will return x , if the value is in both domains.


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You have used 1 of 2 attempts


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Human Subjects and Special Distributions

[Finger Exercises due Nov 07, 2016 at 05:00 IST](#) 

The Sample Mean, Central Limit Theorem, and Estimation

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Module 6: Homework

[Homework due Oct 31, 2016 at 05:00 IST](#) 

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✓ Correct (1/1 point)

Question 2

1/1 point (graded)

Without typing into your R console. What should you get for an output of the R code `pnorm(qnorm(2.1, lower.tail=TRUE))` ?

☐ a. 2.1

☒ b. NaN ✓

☐ c. -2.1

☐ d. 0.98

Explanation

The function `qnorm(x)` gives the value at which the CDF of the standard normal is x . Since the cumulative distribution function can at most take the value of 1, the function is undefined when $x=2.1$, thus your R code should produce an error NaN (Not a Number) when trying to compute `qnorm(2.1)`, which will produce an error for the whole function.

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You have used 1 of 2 attempts

✓ Correct (1/1 point)

Question 3

1/1 point (graded)

Malia is applying to medical school and has to take the MCAT. To get into the school of her dreams she has to score in the top 20% of all test takers for her year. Last year in 2015 the MCAT had a mean of 500 and a standard deviation of 10.6. Assuming a normal distribution and based on what was discussed in class what simple R code would you write to estimate the score she would need in to get into her dream school?

Using `qnorm(A, B, C)`, fill in what you would input for each of A, B, and C.

What is the input for A?

✓ Answer: 0.8

What is the input for B?

✓ Answer: 500

What is the input for C?

✓ Answer: 10.6

10.6**Explanation**

The `qnorm(x,m,sd)` function is the inverse of the cumulative distribution function for a normal distribution with a mean m , a standard deviation sd . That is it gives you the value at which the CDF of the normal distribution is x . Since Malia wants to score in the top 20 percent, her score has to place her at least above 80 percent, or 0.8 of all the other test takers.

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You have used 2 of 2 attempts

✓ Correct (1/1 point)

Discussion**Topic:** Module 6 / Finding the Area Under the Curve Using R - Quiz**Show Discussion**

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