Week 4 Friday

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Comfort Food

Turn to someone sitting next to you. Make sure you know each other's names, and then take about 2 minutes to discuss:

Do you have a go-to comfort food? If so, what is it? If not, do you have some other go-to comfort activity?

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Normal Random Variable

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1. Which of the following pink lines might mark off the observation in a normal distribution which is at the 75th percentile?



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Recall that pnorm takes z-scores to percentiles, while qnorm takes percentiles to z-scores.

2. Which of the following would you use to calculate the observation in a standard normal distribution which is at the 75th percentile?

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(A) pnorm(0.25)

(B) pnorm(0.75)

(C) qnorm(0.25)

(D) None of the above

Recall that pnorm takes z-scores to percentiles, while qnorm takes percentiles to z-scores.

3. Which of the following would you use to calculate the x-coordinate of the pink line?



- (B) 1-pnorm(0.16)
- (C) qnorm(0.16)
- (D) None of the above.



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4. Recall that pnorm takes z-scores to percentiles, while qnorm takes percentiles to z-scores. Which of the following shaded regions might represent 1-pnorm(0.2)?



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5. Which of the following red lines might mark off the observation in a normal distribution that is less than 75% of all observations?



6. Recall that pnorm takes z-scores to percentiles, while qnorm takes percentiles to z-scores. How would you use these functions to find the number z^* such that 80% of the observations of a normal random variable are contained within z^* standard deviations of the mean?

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7. (Extra Practice) Recall that pnorm takes z-scores to percentiles, while qnorm takes percentiles to z-scores. For each of the following, write down how you would use to calculate the stated quantity using pnorm and/or qnorm.

- (a) The percentage of observations whose z-scores are less than 1.5.
- (b) The percentage of observations whose z-scores are greater than 1.5.
- (c) The percentage of observations whose z-scores are between -0.5 and 2.
- (d) The z-score that is larger than exactly 90% of observations.
- (e) The z-score that is less than exactly 75% of observations.
- (f) The number z^* such that 70% of the observations are contained within z^* standard deviations of the mean.

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