ECON221 V26 Quiz 05

Questions

1. (2 points) Let $X \sim \mathsf{Bin}(200, 0.35)$. Fill in the correct information in the blanks so that you can find $\mathbb{P}(X \geq 60)$:

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   pbinom(____, ____, ____, lower.tail = ____)
   ```

2. (2 points) A food processing company markets a soft cheese spread that is sold in a plastic container with an "easy pour" spout. Because of the spout's high cost, the company has developed a new, less expensive spout. A study shows that its introduction will increase profits if fewer than 10 percent of the cheese spread's current purchasers are lost. Suppose that after trying the new spout, 63 out of 1000 randomly selected purchasers say they would stop buying the cheese spread if the new spout were used. What should the company do?

   (a) (1 point) The company assumes that a binomial distribution would be appropriate here. What is the meaning of π in this context?

   (b) (2 points) You are tasked to calculate a p-value to help in decision-making. Fill in the blanks to produce the correct p-value:

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   pbinom(____, ____, ____, lower.tail = ____)
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ECON221 V27 Quiz 05

Questions

1. (2 points) Let $X \sim \mathsf{Bin}(150, 0.8)$. Fill in the correct information in the blanks so that you can find $\mathbb{P}(X \geq 110)$:

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   pbinom(____, ____, ____, lower.tail = ____)
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2. (2 points) Recent medical research has sought to develop drugs that lessen the severity and duratioon of viral infections. Virol, a relatively new drug, has been shown to provide relief for 70 percent of all patients suffering from viral upper respiratory infections. A major drug company is developing a competing drug called Phanatol. The drug company wishes to investigate whether Phanatol is more effective than Virol. An internal study found that among 300 patients having a viral upper respiratory infection, 77 percent reported that Phanatol provided relief. Should the company roll-out the drug and compete?

   (a) (1 point) The company assumes that a binomial distribution would be appropriate here. What is the meaning of π in this context?

   (b) (2 points) You are tasked to calculate a p-value to help in decision-making. Fill in the blanks to produce the correct p-value:

   ```
   pbinom(____, ____, ____, lower.tail = ____)
   ```