KiaraDT is a brand of shoes which has over 100 stores across the world. You are recently appointed as their head of supply chain management. As your first task, you plan to study the monthly demand of their popular black pumps across all the stores. You have a sample data with demands from over 100 stores and you realize that per store, the demand is normally distributed with an average demand of 50 and standard deviation of 20. Recalling your learnings from SC0x, you consider to stock 65 units.

Part 1

0 points possible (ungraded)

a. What is the probability that you will meet the demand if you stock k=65 units?

Enter your answer in decimal form rounded to the nearest hundredth. For example, if your answer is 23.2%, you should enter .23 in the box below.

0.77

0.77

b. What is the probability of a stock out?

Enter your answer in decimal form rounded to the nearest hundredth. For example, if your answer is 23.2%, you should enter .23 in the box below.

0.23

0.23

c. Recall the standard normal distribution. What is the corresponding z-value for the inventory level k=65?

Round your answer to two decimals

0.75

0.75

d. Using the standard unit normal form of the distribution, is the probability that the demand is met, the same as in part a?

- ○ Do not have enough information to determine the answer
- ◉ Yes

No

Submit You have used 2 of 3 attempts

Correct

Part 2

0 points possible (ungraded)

Considering the brand value of KiaraDT, you understand that running out of stock might affect the brand image of the company. Hence, you decide to stock enough to meet 90% of the demand.

a. How many units would you need to stock?

Round UP your answer to the nearest integer.

76

76

b. You decide to test this policy for 3 months. After that you want to change the policy and try to meet 95% of the demand. How many units do you stock now?

Round UP your answer to the nearest integer.

83

83

c. If this distribution is transformed to its standard unit normal form, what is the z-value to meet 95% of demand?

Round your answer to three decimal places.

1.645

1.645

d. What is the inventory level for this value of z?

Round your answer UP.

83

83

Submit You have used 1 of 3 attempts

Correct

Part 3

0 points possible (ungraded)

You decide to be more flexible and have 60 units in the store and 30 units in the warehouse. You will use the warehouse stock in case you run out of the in-store stock.

a. What is the probability that you will meet the demand from the stock in the store?

Enter your answer in decimal form rounded to the nearest hundredth. For example, if your answer is 23.2%, you should enter .23 in the box below.

0.69

0.69

b. What is the probability that your demand is less than your stock in warehouse and in-store combined, but greater than the in-store stock?

Enter your answer in decimal form rounded to the nearest hundredth. For example, if your answer is 23.2%, you should enter .23 in the box below.

0.29

0.29

c. What is the probability that your stock in both places is not enough to meet the demand?

Enter your answer in decimal form rounded to the nearest hundredth. For example, if your answer is 23.2%, you should enter .23 in the box below.

0.02

0.02

d. What is the overall probability that you will meet the demand?

Enter your answer in decimal form rounded to the nearest hundredth. For example, if your answer is 23.2%, you should enter .23 in the box below.

0.98

0.98

Submit You have used 2 of 3 attempts

Correct