Show your work in detail and write neatly and eligibly

1. The time it takes to assemble a children's bicycle by a parent has been shown to be normally distributed with a mean equal to 295 minutes and a standard deviation equal to 45 minutes.

   a. If a bicycle is randomly selected, what is the probability that the time needed by the parent to assemble will be at least 298 minutes?

   b. What is the maximum time needed to assemble 15% of the bicycles?

2. The number of customers that arrive at a fast-food counter during a two-hour period is known to be Poisson distributed with a mean equal to 12.

   a. What is the probability that the next customer will arrive within 20 minutes?

   b. Given that the next customer needs no more than an hour to arrive, what is the probability that the counter man needs to wait more than 40 minutes to receive the next customer?

c. What is the expected waiting time to receive the next customer?

d. If a random sample, of 36 customers, is selected, what is the probability that the mean time of the 36 customers will exceed 15 minutes?

3. Previous research shows that 60 percent of adults prefer Coca-Cola to Pepsi. Recently, an independent research firm questioned a random sample of 200 adults.
    a. What is the chance that 90 or more of these people will prefer Coca-Cola?

    b. What is the chance that the sample proportion won't exceed 0.65?

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