Statistics questions essay sample

ASSIGN BUSTER

1. On average, how many blemishes do we expect on one piece of new furniture? 2. What is the variance of blemishes on one piece of new furniture? (round to the nearest hundredth)

QUESTION 22

The probability that a person catches a cold during the cold-and-flu season is 0. 4. Assume that 10 people are chosen at random. On average, how many of these ten people would you expect to catch a cold? What is the standard deviation of the number of people who catch a cold? (round to the nearest hundredth)

QUESTION 23

The number of nails in a five-pound box is normally distributed with a mean of 566 and a standard deviation of 33. What is the probability that there are less than 500 nails in a randomly-selected five-pound box of nails? (express as a decimal, not a percentage)

The probability is 0. 99 that a randomly-selected five-pound box of nails contains at least how many nails approximately?

QUESTION 24

You are the owner of a small casino in Las Vegas and you would like to reward the high-rollers who come to your casino. In particular, you want to give free accommodations to no more than 10% of your patrons. Suppose that the amount wagered by patrons follows a normal distribution. The mean amount wagered by all patrons is $287 with a standard deviation of $15. You should give free accommodations to those individuals who wager over how much money? (do not include a dollar sign)

QUESTION 25

Candidates for employment at a city fire department are required to take a written aptitude test. Scores on this test are normally distributed with a mean of 260 and a standard deviation of 51. A random sample of nine (9) test scores is taken. What is the standard error of the mean score?

What is the probability that the sample mean score is less than 250? (express as a decimal, not a percentage)

QUESTION 26

It has been found at the population level that 62 percent of all unsolicited third-class mail delivered to households goes unread. Over the course of a month, a household receives 100 pieces of unsolicited mail. What is the mean of the sample proportion of pieces of unread mail? (express as a decimal, not a percentage)

What is the standard error of the sample proportion?

What is the probability that the sample proportion is greater than 0. 60? (express as a decimal, not a percentage) ANSWERS

QUESTION 21

1. On average, how many blemishes do we expect on one piece of new furniture?

2. What is the variance of blemishes on one piece of new furniture? (round to the nearest hundredth)

QUESTION 22

p = 0. 4

q = 1-p = 1-0. 4 = 0. 6

n = 10

1) Mean = np = 10*0. 4 = 4

2) Standard deviation = sqrt [npq]

= sqrt [10*0. 6*0. 4]

= 1. 5492

QUESTION 23

The number of nails in a five-pound box is normally distributed with a mean of 566 and a standard deviation of 33. What is the probability that there are less than 500 nails in a randomly-selected five-pound box of nails? (express as a decimal, not a percentage)

P (X < 500) = P(z < (500-566)/33) = P (z z1) = . 99

Z1 will be 2. 326

So

QUESTION 24

QUESTION 25

Candidates for employment at a city fire department are required to take a written aptitude test. Scores on this test are normally distributed with a mean of 260 and a standard deviation of 51. A random sample of nine (9) test scores is taken. What is the standard error of the mean score?

What is the probability that the sample mean score is less than 250?

(express

as a decimal, not a percentage) P(X-bar < 250) = P(Z < [250-260]/[51/3]) =

P(Z < -0. 5882) = 0. 2782

QUESTION 26

What is the mean of the sample proportion of pieces of unread mail? What is the standard error of the sample proportion?

What is the probability that the sample proportion is greater than 0. 60? (express as a decimal, not a percentage)