PRINTABLE VERSION

Quiz 8

You scored 100 out of 100

Question 1

Your answer is CORRECT.

The length of time needed to complete a certain test is normally distributed with mean 62 minutes and standard deviation 8 minutes. Find the probability that it will take less than 74 minutes to complete the test.

a) ○ 0.0668

b) ○ 0.5334

c) ○ 0.5000

d) ○ 0.4666

e) ◉ 0.9332

f) ○ None of the above

Question 2

Your answer is CORRECT.

Costs for standard veterinary services at a local animal hospital follow a Normal distribution with a mean of $77 and a standard deviation of $23. What is the probability that one bill for veterinary services costs between $42 and $111?

a) ◉ 0.8663

b) ○ 0.1337

c) ○ 0.5000

d) ○ 0.5669

e) ○ 0.4331

f) ○ None of the above

Question 3

Your answer is CORRECT.

Suppose that x is normally distributed with a mean of 60 and a standard deviation of 3. What is $P(x \geq 64.05)$?

a) ◉ 0.089

b) ○ 0.911

c) ○ 0.411

d) ○ 0.091

e) ○ 0.092

f) ○ None of the above

Question 4

Your answer is CORRECT.

At a college the scores on the chemistry final exam are approximately normally distributed, with a mean of 81 and a standard deviation of 10. The scores on the calculus final are also approximately normally distributed, with a mean of 77 and a standard deviation of 11. A student scored 82 on the chemistry final and 82 on the calculus final. Relative to the students in each respective class, in which subject did the student do better?

a) ○ There is no basis for comparison

b) ○ The student did equally well in each course

c) ○ Chemistry

d) ◉ Calculus

e) ○ None of the above

Question 5

Your answer is CORRECT.

Find a value of c so that $P(Z \leq c) = 0.57$.

a) ○ 0.82

b) ○ −0.18

c) ◉ 0.18

d) ○ 0.68

e) ○ 1.18

f) None of the above

Question 6

Your answer is CORRECT.

Find a value of c so that $P(Z \geq c) = 0.54$.

a) −0.10

b) 1.10

c) 0.10

d) −0.20

e) 0.30

f) None of the above

Question 7

Your answer is CORRECT.

What effect does decreasing the sample size have on a distribution of sample means?

a) It will have more variation

b) It will not make any difference

c) It will have less variation

Question 8

Your answer is CORRECT.

In a large population, 67% of the households have cable tv. A simple random sample of 256 households is to be contacted and the sample proportion computed. What is the mean and standard deviation of the sampling distribution of the sample proportions?

a) mean = 171.52, standard deviation = 0.0009

b) mean = 0.67, standard deviation = 0.6694

c) mean = 0.67, standard deviation = 0.0294

d) mean = 0.67, standard deviation = 0.0009

e) mean = 171.52, standard deviation = 0.0294

f) None of the above

Question 9

Your answer is CORRECT.

In a large population, 62% of the households have cable tv. A simple random sample of 121 households is to be contacted and the sample proportion computed. What is the probability that the sampling distribution of sample porportions is less than 58%?

a) 0.8177

b) 0.2881

c) 0.1823

d) 0.7119

e) 0.0912

f) None of the above

Question 10

Your answer is CORRECT.

Which of the following statements is not true?

a) The sampling distribution of the sample mean is always reasonably like the distribution of X, the distribution from which the sample is taken.

b) The standard deviation of the sampling distribution of sample mean = $\sigma/\sqrt{n}$

c) The sampling distribution of sample mean is approximately normal, mound-shaped, and symmetric for $n > 30$ or $n = 30$.

d) The mean of the sampling distribution of sample mean is always the same as that of X, the distribution from which the sample is taken.

e) The larger the sample size, the better will be the normal approximation to the sampling distribution of sample mean.

f) None of the above

Question 11

Your answer is CORRECT.

Suppose a random sample of 60 measurements is selected from a population with a mean of 25 and a variance of 200. Select the pair that is the mean and standard error of $\bar{x}$.

a) ◉ [25, 1.825]

b) ○ [25, 2.325]

c) ○ [25, 2.225]

d) ○ [60, 2.325]

e) ○ [25, 1.925]

f) ○ None of the above

Question 12

Your answer is CORRECT.

A random sample of 1024 12-ounce cans of fruit nectar is drawn from among all cans produced in a run. Prior experience has shown that the distribution of the contents has a mean of 12 ounces and a standard deviation of .12 ounce. What is the probability that the mean contents of the 1024 sample cans is less than 11.994 ounces?

a) ○ 0.095

b) ○ 0.085

c) ◉ 0.055

d) ○ 0.075

e) ○ 0.065

f) ○ None of the above

Question 13

Your answer is CORRECT.

Suppose that a random sample of size 49 is to be selected from a population with mean 48 and standard deviation 7. What is the approximate probability that $\overline{X}$ will be within .5 of the population mean?

a) ○ 0.0569

b) ○ 0.6171

c) ○ 0.7658

d) ◉ 0.3829

e) ○ 0.5829

f) None of the above

Question 14

Your answer is CORRECT.

Lloyd's Cereal company packages cereal in 1 pound boxes (16 ounces). A sample of 49 boxes is selected at random from the production line every hour, and if the average weight is less than 15 ounces, the machine is adjusted to increase the amount of cereal dispensed. If the mean for 1 hour is 1 pound and the standard deviation is 0.2 pound, what is the probability that the amount dispensed per box will have to be increased?

a) 0.3773

b) 0.2144

c) 0.0144

d) 0.9856

e) 0.0287

f) None of the above