PRINTABLE VERSION

Quiz 5

You scored 100 out of 100

Question 1

Your answer is CORRECT.

Given the following sampling distribution:

X	-20	-9	-3	11	19
P(X)	1/25	2/25	1/100	3/50	___

What is P(X = 19)?

a) 0.82

b) 0.79

c) 0.80

d) 0.81

e) 0.19

f) None of the above

Question 2

Your answer is CORRECT.

Given the following sampling distribution:

X	-18	-11	-4	4	19
P(X)	7/100	1/50	9/100	1/20	___

What is P(X > -11)?

a) 0.94

b) 0.93

c) 0.90

d) ◉ 0.91

e) ○ 0.88

f) ○ None of the above

Question 3

Your answer is CORRECT.

Given the following sampling distribution:

X	-19	-14	-3	5	15
P(X)	$\frac{1}{25}$	$\frac{9}{100}$	$\frac{7}{100}$	$\frac{2}{25}$	___

What is the mean of this sampling distribution?

a) ○ 8.9

b) ○ 9.2

c) ○ −3.2

d) ◉ 9.0

e) ○ −0.2

f) ○ None of the above

Question 4

Your answer is CORRECT.

Suppose you have a distribution, X, with mean = 14 and standard deviation = 4. Define a new random variable Y = 4X - 3. Find the mean and standard deviation of Y.

a) ○ $E[Y] = 53; \sigma_Y = 13$

b) ○ $E[Y] = 56; \sigma_Y = 13$

c) ○ $E[Y] = 56; \sigma_Y = 64$

d) ○ $E[Y] = 53; \sigma_Y = 64$

e) ◉ $E[Y] = 53; \sigma_Y = 16$

f) ○ None of the above

Question 5

Your answer is CORRECT.

In testing a certain kind of missile, target accuracy is measured by the average distance X (from the target) at which the missile explodes. The distance X is measured in miles and the sampling distribution of X is given by:

X	0	10	50	100
P(X)	$1/34$	$1/17$	$2/17$	$27/34$

Calculate the mean of this sampling distribution.

a) 83.4

b) 88.4

c) 865.4

d) 29.4

e) 85.9

f) None of the above

Question 6

Your answer is CORRECT.

In testing a certain kind of missile, target accuracy is measured by the average distance X (from the target) at which the missile explodes. The distance X is measured in miles and the sampling distribution of X is given by:

X	0	10	50	100
P(X)	$1/40$	$1/20$	$1/10$	$33/40$

Calculate the variance of this sampling distribution.

a) 88.0

b) 253.7

c) 761.0

d) 27.6

e) 5138.7

f) None of the above

Question 7

Your answer is CORRECT.

Suppose you want to play a carnival game that costs 8 dollars each time you play. If you win, you get $100. The probability of winning is $3/100$. What is the expected value of the amount the carnival stands to gain?

a) ○ 5.10

b) ○ −5.00

c) ◉ 5.00

d) ○ 5.30

e) ○ 3.00

f) ○ None of the above

Question 8

Your answer is CORRECT.

Suppose you want to play a carnival game that costs 8 dollars each time you play. If you win, you get $100. The probability of winning is $3/100$. What is the expected value of the amount that you, the player, stand to gain?

a) ○ −5.10

b) ○ 5.00

c) ◉ −5.00

d) ○ −5.30

e) ○ −3.00

f) ○ None of the above

Question 9

Your answer is CORRECT.

A random sample of 2 measurements is taken from the following population of values: 0, 1, 3, 4, 7. What is the probability that the range of the sample is 7?

a) ◉ 0.1

b) ○ 0.4

c) ○ 0.2

d) ○ 0.3

e) ○ 0.5

f) ○ None of the above

Question 10

Your answer is CORRECT.

A furniture store is having a sale on sofas and you're going to buy one. The advertisers know that buyers get to the store and that 1 out of 3 buyers change to a more expensive sofa than the one in the sale advertisement. Let X be the cost of the sofa. What is the average cost of a sofa if the advertised sofa is $150 and the more expensive sofa is $450?

a) ◉ 250.00

b) ○ 350.00

c) ○ 250.22

d) ○ 225.00

e) ○ 300.00

f) ○ None of the above