

# Final exam paper

**You can preview this quiz, but if this were a real attempt, you would be blocked because:**

This quiz is not currently available

## Question 1

Not yet answered

Marked out of 10.00

Flag question

### Question text

Complaints about an Internet brokerage firm occur at a rate of 4 per day. The number of complaints appears to be Poisson distributed. The probability that the firm receives 6 or more complaints in a day is (to four decimal places):

Select one:

- A. 0.1562
- B. None of those listed.
- C. 0.7851
- D. 0.2148
- E. 0.1106

## Question 2

Not yet answered

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Flag question

### Question text

The distribution of home prices in Flagstaff is skewed to the right. The median price is \$160,000. Specify the general location of the mean.

Select one:

- A. it may fall anywhere relative to \$160,000
- B. equal to \$160,000
- C. lower than \$160,000
- D. Impossible to specify
- E. higher than \$160,000

### Question 3

Not yet answered

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#### Question text

Aaron's goal is to read an average (mean) of 26 pages per day for 6 days. During the first 5 days he reads 23 pages per day. How many pages must he read on the 6th day to reach his goal?

Select one:

- A. None of those listed.
- B. 41
- C. 26
- D. 19
- E. 29

### Question 4

Not yet answered

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#### Question text

Use normal approximation to estimate the probability of passing a true/false test of 60 questions if the minimum passing grade is 80%

and all responses are random guesses.

Select one:

- A. The probability is approximately 0.9999.
- B. The probability is approximately 0.000001679.
- C. The probability is approximately 0.2742.
- D. The probability is approximately 0.04219.
- E. The probability is none of those listed.

### Question 5

Not yet answered

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#### Question text

A normally distributed random variable with mean 1.5 and standard deviation 6.5 is sampled to get two independent values,  $x_1$  and  $x_2$ .

The mean is approximated using the formula  $(4x_1 + 5x_2)/10$ .

The bias and the mean squared error are given by:

Select one:

- A. bias: 1.5 and MSE: 42.25
- B. bias: -0.15 and MSE: 17.3225
- C. None of those listed.
- D. bias: -1.5 and MSE: 17.3225
- E. bias: 0 and MSE: 17.345

### Question 6

Not yet answered

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#### Question text

An epidemiologist is worried about the prevalence of the flu in East Vancouver and the potential shortage of vaccines for the area. She will need to provide a recommendation for how to allocate the vaccines appropriately across the city. She takes a simple random sample of 333 people living in East Vancouver and finds that 40 have recently had the flu.

Which of the following statements is a correct interpretation of the 95% confidence interval for the true proportion of East Vancouver residents who have recently had the flu.

Select one:

- A. If another random sample of 333 East Vancouver residents is drawn, there is a 95% probability that the sample proportion of East Vancouver residents who have recently had the flu equals 40/333.
- B. There is a 95% probability that the true proportion of East Vancouver residents who have recently had the flu equals 40/333.
- C. If many random samples of 333 East Vancouver residents are drawn, 95% of the resulting confidence intervals will contain the value 40/333.
- D. None of those listed.
- E. If many random samples of 333 East Vancouver residents are drawn, 95% of the resulting confidence intervals will contain the value of the true proportion of East Vancouver residents who have recently had the flu.

### Question 7

Not yet answered

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Flag question

#### Question text

A random variable  $X$  follows a Normal distribution with mean  $\mu = 38$  and standard deviation  $\sigma = 2$ .

Which of the following gives the expectation  $E(X^2)$  ?

Select one:

- A. 1600
- B. 1440
- C. 1444

D. 1448

E. None of those listed.

### Question 8

Not yet answered

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Flag question

#### Question text

A survey records many variables of interest to the researchers conducting the survey. Below are some of the variables from a survey conducted by the U.S. Postal Service. Which of the variables is categorical?

Select one:

- A. County of residence.
- B. Total household income, before taxes, in 1993.
- C. Age of respondent.
- D. Number of people, both adults and children, living in the household.
- E. None of those mentioned.

### Question 9

Not yet answered

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Flag question

#### Question text

The Central Limit Theorem says:

Select one:

- A. None of those mentioned.
- B. When  $n < 30$ , the sampling distribution of  $\bar{X}$  will be approximately a normal distribution.
- C. When  $n > 30$ , the sampling distribution of  $\bar{X}$  will be approximately a

normal distribution.

D. When  $n > 30$ , the original population will be approximately a normal distribution.

E. When  $n < 30$ , the original population will be approximately a normal distribution.

### Question 10

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#### Question text

A newspaper conducted a statewide survey concerning the 1998 race for state senator. The newspaper took a simple random sample of  $n = 1200$  registered voters and found that 620 would vote for the Republican candidate. Let  $p$  represent the proportion of registered voters in the state who would vote for the Republican candidate.

We test  $H_0 : p = 0.5$  against the alternative  $H_1 : p > 0.5$ .

The P-value of the test is:

Select one:

A.  $P = 0.8758$

B. None of those listed.

C.  $P = 0.5166$

D.  $P = 0.2482$

E.  $P = 0.1241$