

Statistical Methods II

Quiz 01

Name: _____ Date: _____

Welcome to the first quiz. It is a practice quiz designed for you to see what types of information I expect you to have for the quiz. You have five (5) minutes to answer these 10 questions. The total number of points is 10.

Distributions

Let us suppose $X \sim \mathcal{N}(\mu = 1, \sigma^2 = 3)$, $Y \sim \mathcal{N}(\mu = 3, \sigma^2 = 2)$, and $Z \sim \mathcal{N}(0, 1)$. Answer the following questions.

- 1 (1 point)
What is the mean of $X + Y$?
- 2 (1 point)
What is the variance of $X + Z$?
- 3 (1 point)
What is the distribution (including mean and variance) of $X + Y$?
- 4 (1 point)
What is the distribution (including mean and variance) of $3X + 2Y$?

True and False

Please write 'TRUE' in the space provided if the statement is true; 'FALSE', if the statement is not true.

- 5 (1 point)
Two of the assumptions of the t-test are that the measurements are Normally distributed and that the measurements are independent.

5. _____

- 6 (1 point)
The null hypothesis of a two-sample t-test is that the means of the two populations are the same.

6. _____

7 (1 point)

If the calculated p-value is less than your chosen alpha, you should reject the null hypothesis.

7. _____

8 (1 point)

Power is a measurement of how well the test is able to distinguish between two competing hypotheses.

8. _____

R Questions

What do the following commands do? Make sure you make it clear that you know what the function and its given parameters do.

9 (1 point)

```
read.csv("dogfight.csv", header=TRUE)
```

10 (1 point)

```
t.test(var1, var2, var.equal=TRUE)
```