A researcher examines the effect of hormone ‘Z’ on appetite in rats (which is normally distributed). Ten rats are fed hormone Z and ten others are fed their regular diet. How many ounces of food they eat afterwards is measured.

H0:

HA :

Z-fed rats Regular diet rats

8 5

10 6

12 3

6 4

6 7

7 8

9 6

8 5

7 4

11 8

What question is your inferential statistic asking about this experiment?

Calculate your statistic.

How many degrees of freedom do you have in this problem?

What is the probability of your statistic from the website?

What do you conclude about your null hypothesis?

Explain what this conclusion tells you about why the rat samples have different means.

Describe the error you might be making.

How likely is this error to have happened?

Answers:

H0: The population mean appetite is the same for rats fed hormone Z and those fed a regular diet.

(or, hormone Z has no effect)

HA: The population mean appetite is not the same for rats fed hormone Z and those fed a regular diet.

(or hormone Z affects appetite)

Do both your samples come from populations with the same mean? (or, do they both still come from the null population, even though one is treated with an IV?)

t = 3.30

df = 18

p = .004

Reject H0

The two samples of rats probably have different mean appetites because one had hormone Z in their diet.

The samples might actually come from the same population that does not have any hormone Z exposure. (The samples might still be different because of chance/coincidence)

.4% of the time.