

-
2. Holly, a **botanist**, read an online report that stated that adding coffee grounds to the soil of rosebushes will produce more roses. Holly decides to conduct an experiment to investigate this claim. She grows 30 rosebushes in a greenhouse with a controlled environment so the conditions will be the same for all rosebushes.

When the rosebushes are a month old, she randomly assigns 15 rosebushes to have one-half cup of coffee grounds added to their soil weekly. The other 15 rosebushes will not have coffee grounds added to their soil.

After three months, she counts the number of roses on each rosebush.

botanist: a scientist who studies the biology of plants

Part A

Based on the information provided about Holly's experiment, identify each of the following.

- i. Treatments
- ii. Experimental units
- iii. Response variable

Part B

In the context of Holly's experiment, describe how the treatments can be randomly assigned to the experimental units so that each treatment has the same number of units.

Part C

After the experiment, Holly determines that her results were statistically significant at the $\alpha = 0.05$ level of significance. Explain the meaning of "statistically significant" in this context.