

## AP\* Statistics Quiz A – Chapter 12

Name \_\_\_\_\_

An article in a local newspaper reported that dogs kept as pets tend to be overweight. Veterinarians say that diet and exercise will help these chubby dogs get in shape. The veterinarians propose two different diets (Diet A and Diet B) and two different exercise programs (Plan 1 and Plan 2). Diet A: owners control the portions of dog food and dog treats; Diet B: a mixture of fresh vegetables with the dog food and substitute regular dog treats with baby carrots. Plan 1: three 30-minute walks a week; Plan 2: 20-minute walks daily. Sixty dog owners volunteer to take part in an experiment to help their chubby dogs lose weight.

1. Identify the following:

a. the subjects:

\_\_\_\_\_

b. the factor(s) and the number of level(s) for each:

\_\_\_\_\_

c. the number of treatments:

\_\_\_\_\_

d. whether or not the experiment is blind (or double-blind):

\_\_\_\_\_

e. the response variable:

\_\_\_\_\_

2. Design an experiment to determine whether the diet and exercise programs are effective in helping dogs to lose weight.

*AP\* Statistics Quiz A – Chapter 12 - Key*

An article in a local newspaper reported that dogs kept as pets tend to be overweight. Veterinarians say that diet and exercise will help these chubby dogs get in shape. The veterinarians propose two different diets (Diet A and Diet B) and two different exercise programs (Plan 1 and Plan 2). Diet A: owners control the portions of dog food and dog treats; Diet B: a mixture of fresh vegetables with the dog food and substitute regular dog treats with baby carrots. Plan 1: three 30-minute walks a week; Plan 2: 20-minute walks daily. Sixty dog owners volunteer to take part in an experiment to help their chubby dogs lose weight.

1. Identify the following:
  - a. the subjects:  
60 chubby dogs
  - b. the factor(s) and the number of level(s) for each:  
diet (two levels) and exercise (two levels)
  - c. the number of treatments:  
four treatments (Diet A and Plan 1, Diet A and Plan 2, Diet B and Plan 1, Diet B and Plan 2)
  - d. whether or not the experiment is blind (or double-blind):  
This design is at best single-blind, since the owners know which diet and exercise plan their dogs are on, but the evaluators do not have to be given this information.
  - e. the response variable:  
weight loss
  
2. Design an experiment to determine whether the diet and exercise programs are effective in helping dogs to lose weight.

