Choose from the following the terms that best describe the data given:

a. *nominal*
b. *ordinal*
c. *interval*
d. *ratio*

1. The countries of the African continent.

_____a_____

2. The number of people that live in each of the countries of Africa.

_____ d_____

3. The year of formation of each African country.

_____ c _____

4. The per capita income of each African country.

_____ d _____

5. The rankings of the African countries by population (highest to lowest).

_____ b _____

6. The average temperature of each African country in July.

_____ c _____

7. The area of land mass in square miles of each African country.

_____ d _____

8. The classification of African countries as friendly, neutral, or not friendly to tourists.

_____ b _____

Choose from the following the term that best describe each study given below:

a. *simple random sampling*
b. *systematic sampling*
c. *stratified sampling*
d. *cluster sampling*
e. *convenience sampling*

9. At the Big-5, all customers are asked for their zip codes.

_____ e _____

10. From a cupboard containing 20 plates and 15 bowls, 4 plates and 4 bowls are chosen randomly.

_____ c _____

11. In a storage room, 25 boxes contain plates. Three of the boxes are chosen randomly and all of the plates in the 3 boxes are inspected for breakage.

_____ d _____

12. From the student directory of a local college, 50 freshmen, 50 sophomores, 50 juniors and 50 seniors are randomly chosen to survey regarding their student loans.

_____ c _____

13. From a directory of all CSU professors, every 19^{th} name beginning with the 5^{th} name was selected to complete a survey regarding job satisfaction.

_____ b _____

14. From a directory of all CSU professors, 50 were randomly selected to complete a survey regarding job satisfaction.

_____ a _____

In a study to determine if posting calorie counts affects their customer menu choices, Starbucks retained copies of the receipts for one week in various stores around the United States. Calories were posted by each menu item in 50 of their stores in New York City, California, and Washington State, but no changes were made to 50 Starbucks in Dallas, Florida, and Wyoming. Starbucks reported that the average calorie consumption reduced by 6% per transaction.

Choose from the following to complete the statements below (not all of them will be used):

a. *calorie consumption per transaction*
b. *Starbucks customers at 50 selected stores in New York, California, and Washington State*
c. *menus that post calories by each item and menus that do not*
d. *Starbucks' menus*
e. *education level of the customers*
f. *Starbucks customers at 100 selected stores in New York, California, Washington State, Dallas, Florida, and Wyoming*
g. *Starbucks customers at 50 selected stores in Dallas, Florida, and Wyoming*
h. *all Starbucks customers*
i. *all American researchers*
j. *experimental*
k. *observational*

Write the letter of the phrase that best completes the statements below:

15. The population is _____ h_____.

16. The sample is _____ f_____.

17. The explanatory variable is ___d____.

18. The response variable is ____ a_____.

19. The study is _____ j_____.

20. A lurking variable may be __ e_____.

21. The treatment group is _____ b_____.

22. The control group is ___ g_____.

23. Honda manufacturers test drove 12 pre-production prototypes of the 2017 Fit vehicles to determine their fuel efficiency.

Honda Fit
City Driving (mpg)

30	30	32	34	34	35
35	40	42	42	42	43

Construct a frequency distribution for the fuel efficiency data using 5 classes.
Some have been filled in for you to give you a head start.

$\frac{43-30}{5} = \frac{13}{5} \Rightarrow 3$

2017 Honda Fit fuel economy during city driving			
MPG Class	**MPG Class Boundaries**	**Frequency**	**Percent** (to 1 decimal place)
30 - 32	29.5 – 32.5	3	$\frac{3}{15} = .2 = 20.0\%$
33 – 35	32.5 – 35.5	4	$\frac{4}{15} \approx .267 = 26.7\%$
36 – 38	35.5 – 38.5	0	0%
39 – 41	38.5 – 41.5	3	$\frac{3}{15} = .2 = 20.0\%$
42 – 44	41.5 – 44.5	5	$\frac{5}{15} = .333 = 33.3\%$

24. A veterinarian counted the number of dogs of different breeds that were brought into her clinic on a particular day. Here is what she counted:

Beagle	Golden Retriever	Labrador Retriever	German Shepherd	Bulldog
5	10	14	9	6

Make a pie graph to represent the data above. Show all of your calculations. Title your graph, neatly shade in each category using different colors, and label each sector or include a key.

	Frequency	**Relative Frequency**	**Angle**
Beagle	**5**	$\frac{5}{44} \approx .114$	**$.114 \cdot 360 \approx 41^\circ$**
Golden Retriever	**10**	$\frac{10}{44} \approx .227$	**$.227 \cdot 360 \approx 82^\circ$**
Labrador Retriever	**14**	$\frac{14}{44} \approx .318$	**$.318 \cdot 360 \approx 114^\circ$**
German Shepherd	**9**	$\frac{9}{44} \approx .205$	**$.205 \cdot 360 \approx 74^\circ$**
Bulldog	**6**	$\frac{6}{44} \approx .136$	**$.136 \cdot 360 \approx 49^\circ$**

Dog Breeds (How Many of Each) Brought into a Veterinarian's Office in One Day