Graphing Lab Stations

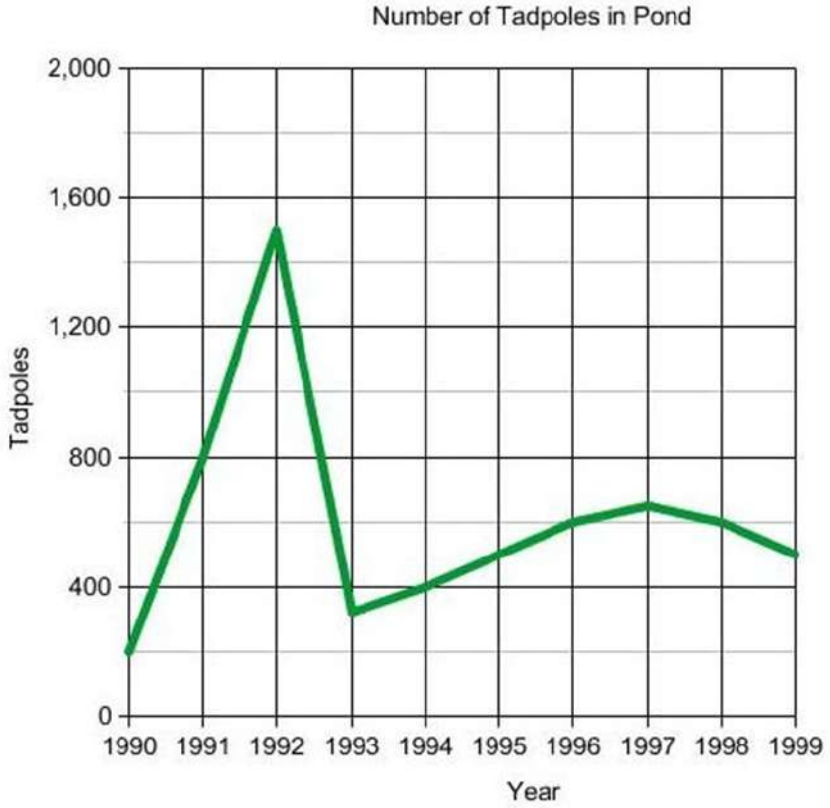
Unit 2 Essentials of Physics

Words to Describe Graphs

Look at the words on your student sheet: Peak, rise, soar, fluctuate, decline, drop, climb, increase, stabilize, maximum, minimum, constant, decrease

1. Circle the verbs that mean to go up.
2. Underline the verbs that mean to go down.
3. Put a star next to the verb that means to go up and down.
4. Use an up arrow to indicate the word that means to reach its highest level.
5. Use a down arrow to indicate the word that means to reach its lowest level.
6. Put a triangle next to the word that means to stay the same for a period of time.

Station 1- Words to Describe Graphs



Station 1- Words to Describes Graphs

Use the vocabulary words from the beginning to fill in the blank or answer the question based on the graph. There be more than 1 correct answer!

1. In the year 1990, tadpole populations began to _____ rapidly.
2. Tadpole populations reached a _____ in 1992.
3. Between 1992 and 1993, populations of tadpoles _____.
4. Tadpole populations _____after 1993.

Independent and Dependent Variables

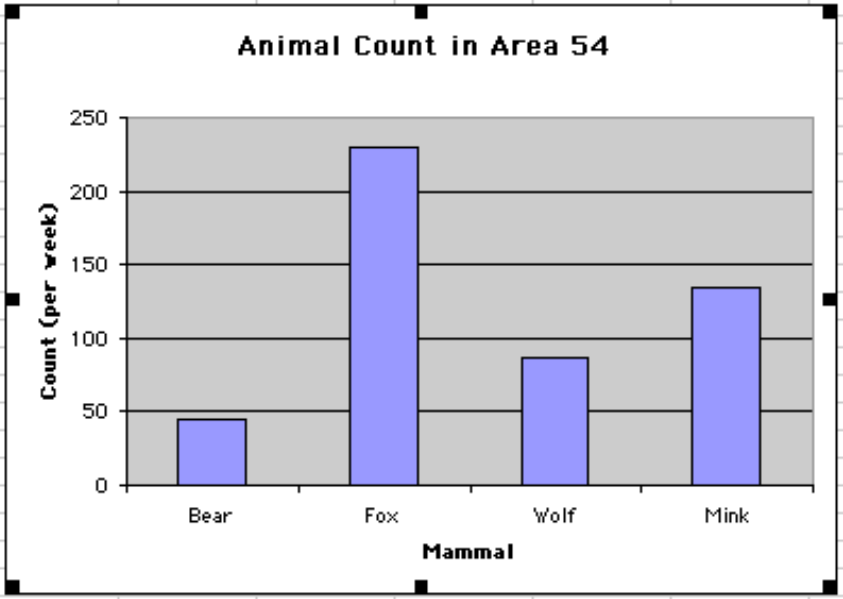
Copy down these important notes!

The x-axis is the **horizontal** axis and the **first column** of a data table. The x-axis is the independent variable.

The Y axis is the **vertical** axis and the **second column** of a data table. The y-axis is the dependent variable.

1) What is the independent variable in this graph?
2) What is the dependent variable in this graph?

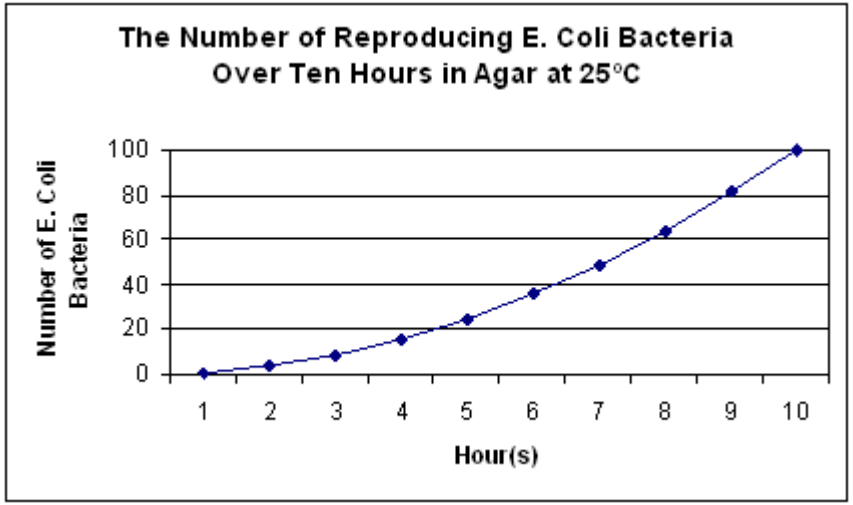
Mammal	Count
Bear	45
Fox	230
Wolf	87
Mink	134



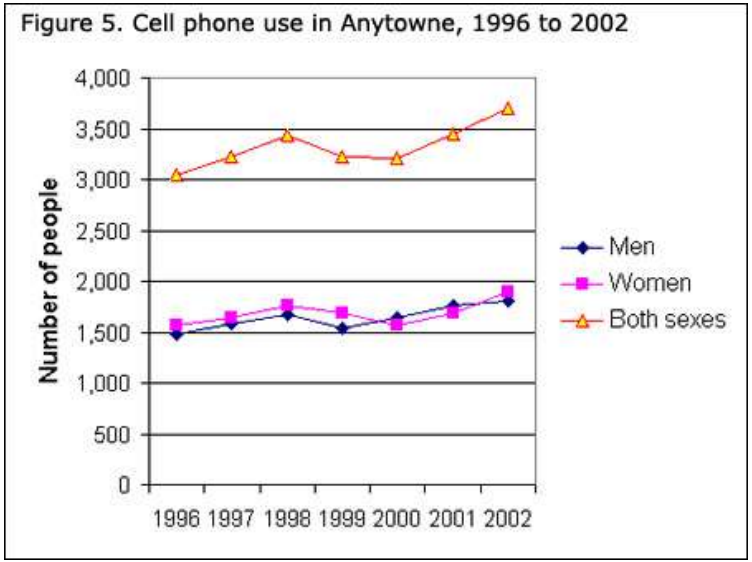
Station 2: Independent and Dependent Variables

For the following graphs, determine the independent and dependent variables.

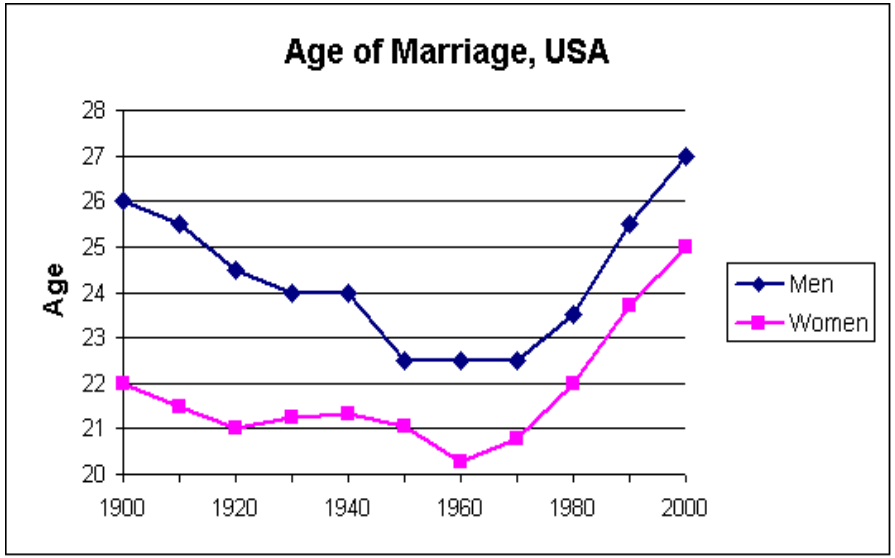
Graph #1



Graph #2



Station 2: Independent and Dependent Variables



Graph #3:

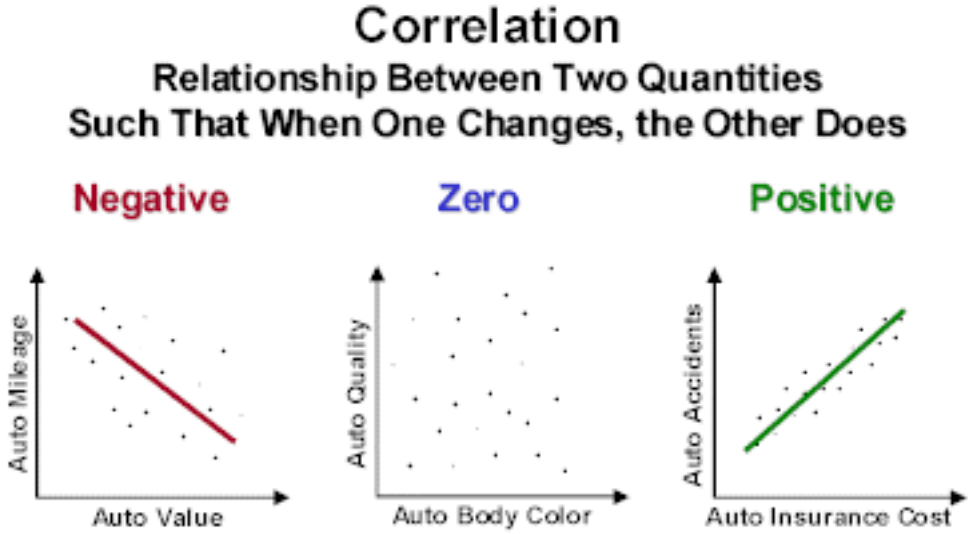
1) What is the title of this graph?
2) What is the independent variable?
3) What is the dependent variable?
4) In what year did the age of marriage increase for both men and women?
5) In 1960, what was the average age for marriage for men and women?
6) Was there any time that the average age for marriage for men and women was the same? Why or why not?

Correlations in Graphs

Read these important notes:

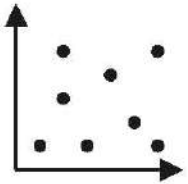
When we see scatter plots, we can determine the **correlation or trend** in the graph.

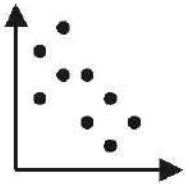
See the image on the right to determine the type of correlation.

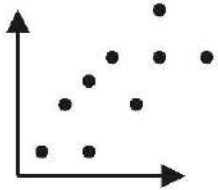


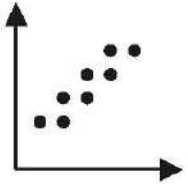
Station 3: Correlations in Graphs

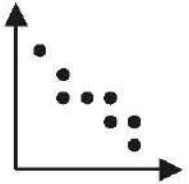
Categorize each scatter plot as positive, negative or no correlation.

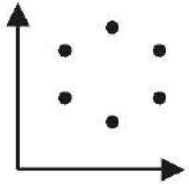
1. 

2. 

3. 

4. 

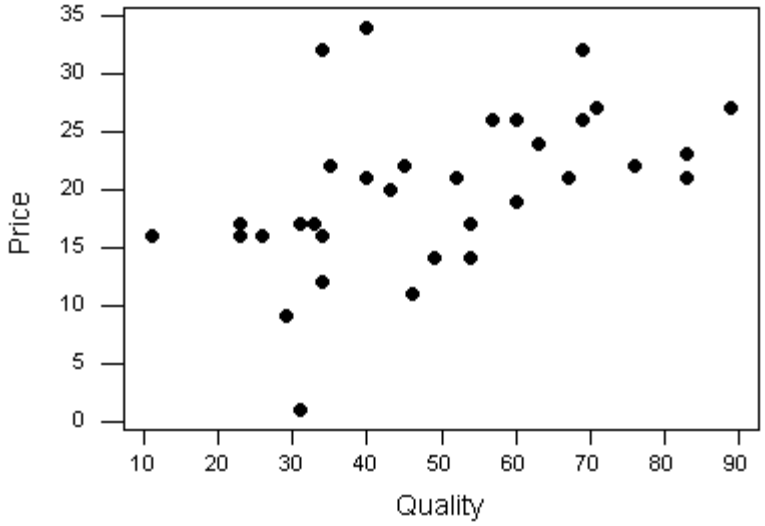
5. 

6. 

Station 3: Correlations in Graphs

The graph on the right represents price of shoes and the quality (out of a scale of 100).

1) What type of correlation is this?
2) As _____ increases, price _____.



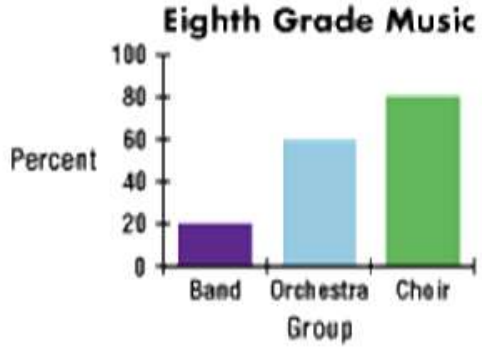
Station 4: Match Graphs and Data

For the following graphs, determine which graph matches the data table or description.

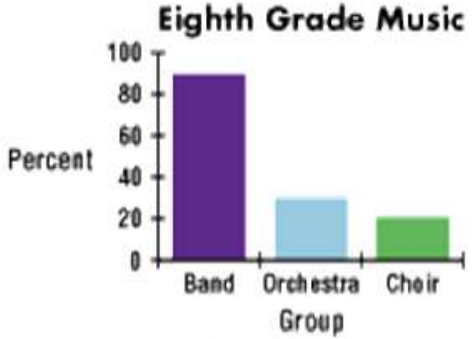
Graph A

In an eighth grade class, 20% of the students are in the band, 20% are in the orchestra, and 90% are in the choir. Which bar graph best represents this data?

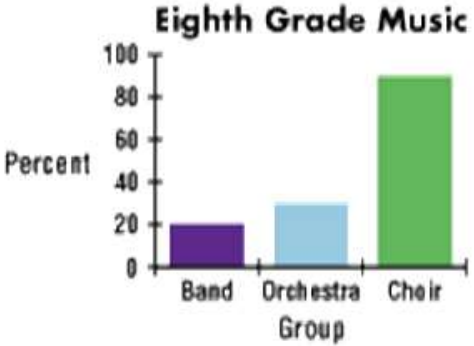
#1



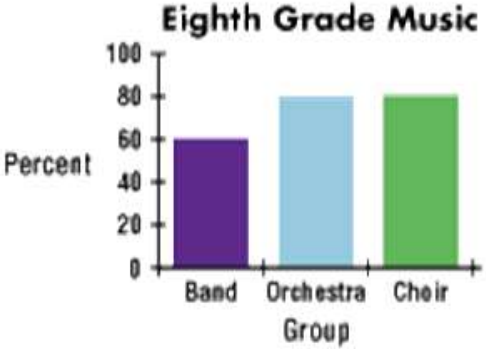
#2



#3



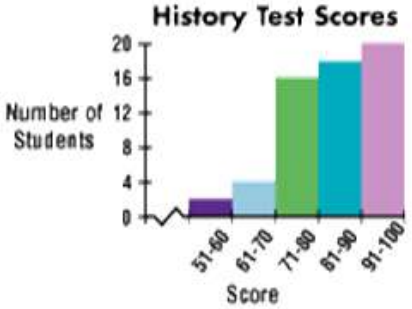
#4



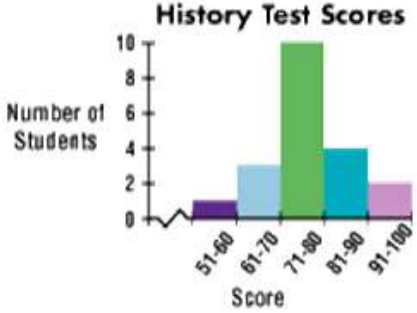
Graph B

Scores	Number of Students
51–60	1
61–70	3
71–80	10
81–90	4
91–100	2

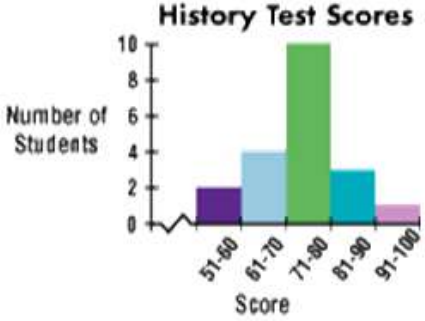
#5



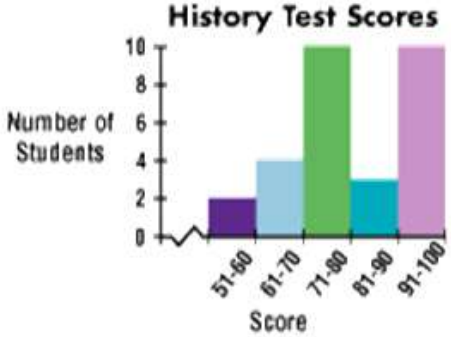
#6



#7



#8



Graph C

6C.

The line graph below represents the top wind speeds of Hurricane Gordon in 1999. Between which two days did the maximum wind speed increase the most?

Source: http://weather.unisys.com

#9 September 16–September 17

#10 September 10–September 11

#11 September 11–September 12

#12 September 7–September 8

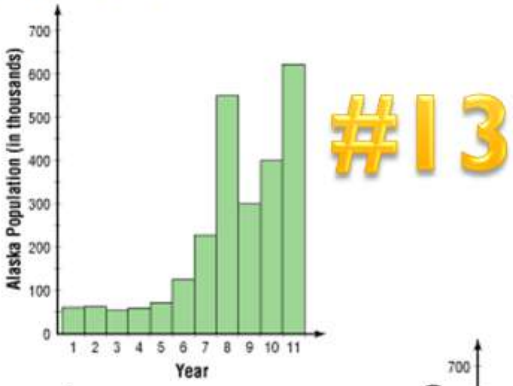
Graph D

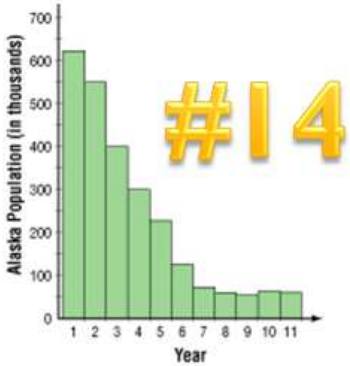
6D.

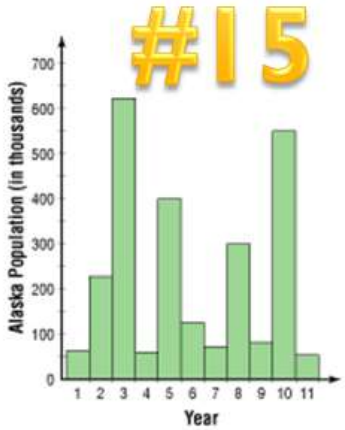
The following table lists the population of Alaska from 1900–2000. Pick the correct bar graph of the data.

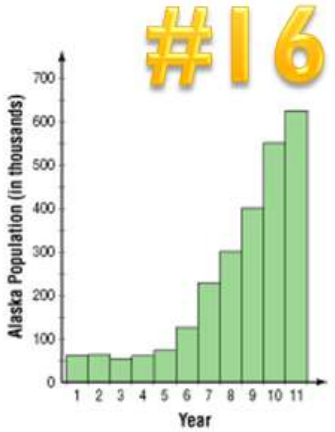
Year	Population
1900	63,592
1910	64,356
1920	55,036
1930	59,278
1940	72,524
1950	128,643
1960	226,167
1970	302,583
1980	401,851
1990	550,043
2000	626,932

Source: U.S. Census Bureau









Graph E

Number of Burgers Sold	Month
100	June
400	July
300	August
500	September
200	October

Graph 1

Graph 2

Graph 3

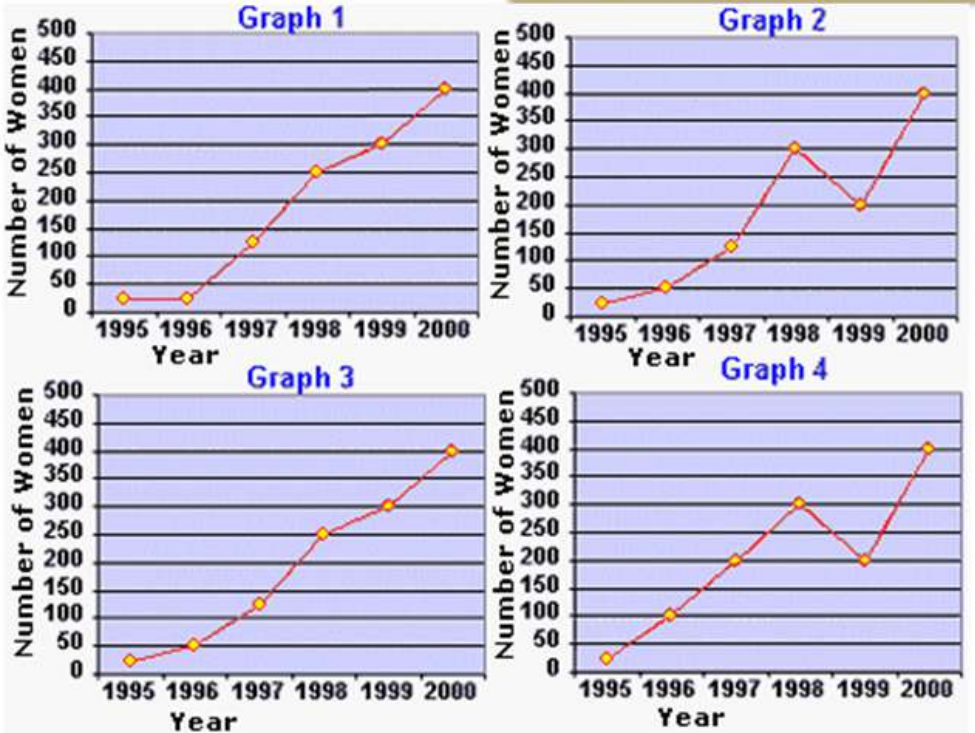
Graph 4

Graph F

6F.

The table shows the increase in number of women competing in the beauty contest held by a company since the beginning of the contest in 1995. Which of the line graphs represents the data in the table?

1995	1996	1997	1998	1999	2000
25	25	125	250	300	400



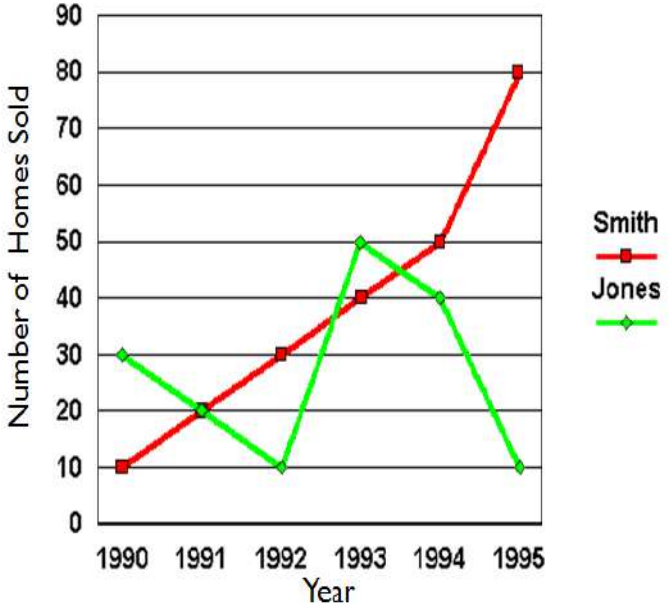
Station 5: Constructing a 2 Line Graph

This graph is a 2 line graph. We can plot two data sets on the same graph.

Fill in the data table for this graph on your student sheet. I've done the first one for you!

Year	Smith	Jones
1990	10	30

The following Line graph depicts sales for two real estate agents during the years 1990 - 1995.



Station 5: Constructing a 2 Line Graph

X axis: Age (In Years)

Y Axis: Average Thickness of Tree Rings

Graph Forest A then Forest B. You should have TWO LINES!

Age of the tree in years	Average thickness of the annual rings in cm. Forest A	Average thickness of the annual rings in cm. Forest B
10	2.0	2.2
20	2.2	2.5
30	3.5	3.6
40	3.0	3.8
50	4.5	4.0
60	4.3	4.5

The thickness of the annual rings indicate what type of environmental situation was occurring at the time of its development. A thin ring, usually indicates a rough period of development—lack of water, forest fires, or a major insect infestation. On the other hand, a thick ring indicates just the opposite.

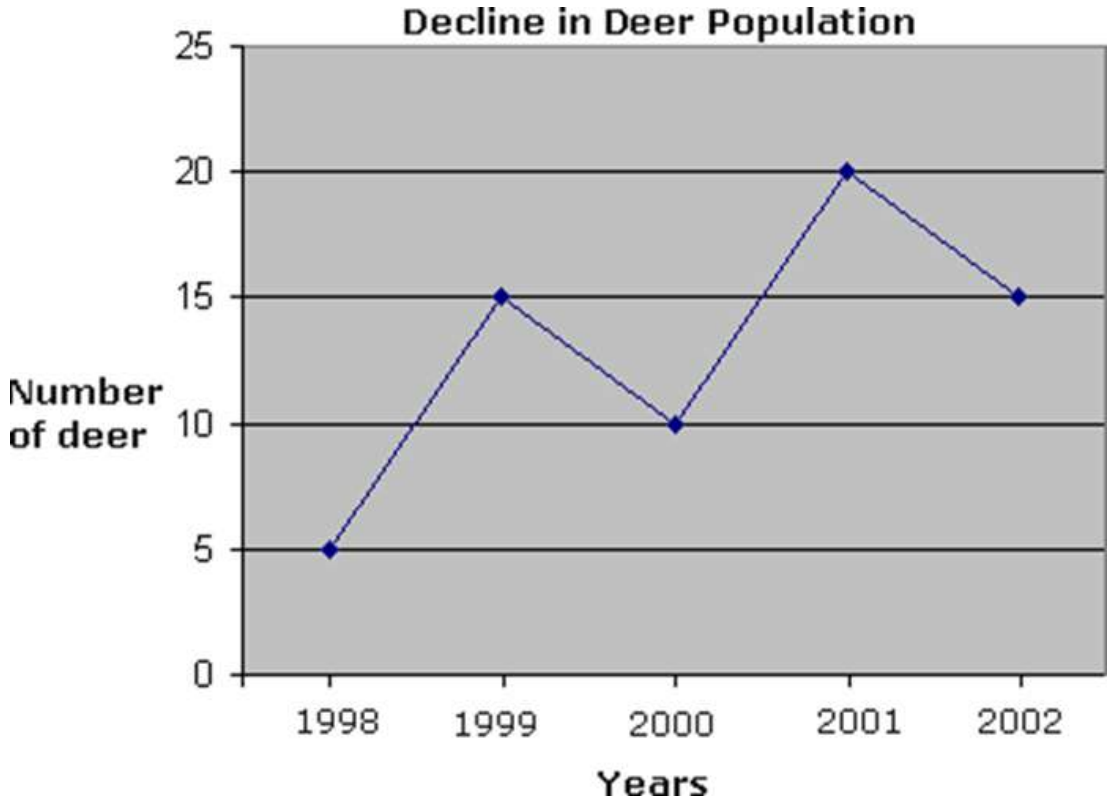
Station 6: Construct a One Line Graph

Answer the following questions about the line graph:

1) What is the number of deer in 2000?

2) How often are deer being counted?

3) Do you think the title of the graph is valid? Why/Why not?



Station 6: Construct a One Line Graph

Create a graph for the following data table on your graph paper. **Remember that the first column is always your x axis.** Make sure you label your axes and have a title.

Time (minutes)	Temperature (°C)
0	16
1	23
2	32
3	43
4	54
5	60
6	68
7	75
8	80
9	86
10	91