

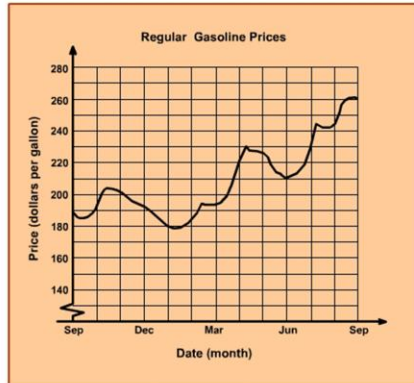
Focus Day – Feb. 10

9th Grade FCAT - Data & Probability

Share the following information with the students concerning the Data & Probability components of the FCAT:

- Content Focus (based on the released 2006 FCAT)
 - Charts
 - Box and whisker plots
 - Mean
 - Comparing measures of central tendency and range
 - Single event probability
 - Combinations
 - Interpretation of data

1. The graph below shows the average price of a gallon of gasoline in the U.S. from September 2004 through September 2005. Given the trend of this data, approximately how high can we expect the average price to reach by September 2006?



- A. \$2.00
- B. \$2.20
- C. \$2.50
- D. \$3.20

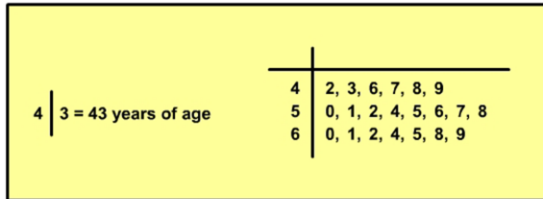
Discuss the components of this graph before reading the problem.

- Point out the Title
- Discuss the measurements on the axes
- Explain what the jagged line means on the y axis

Discuss what the problem is asking them to find and how the graph might help with finding the approximate answer

- The correct answer is D

2. The following list shows the ages at the time of inauguration of the 43 U.S. Presidents:
 42, 43, 46, 46, 47, 48, 49, 49, 50, 50, 51, 51, 51, 51, 52, 52, 54, 54, 54, 54, 54, 55, 55, 55, 55, 56, 56, 56, 57, 57, 57, 57, 58, 60, 61, 61, 61, 62, 64, 64, 65, 68, 69.
 Lindsey used this list to create the following stem-and-leaf plot shown below. What error did she make in creating the stem-and-leaf plot?



- A. She only used 4, 5, and 6 as stems, but she should have also used 3 and 7.
- B. She should not have included an entry for 60.
- C. She should have included entries for 44, 45, 53, 59, 63, 66, and 67.
- D. She should have included each age as many times in the stem-and-leaf plot as it occurred in the list.

Discuss the components of this graph before reading the problem.

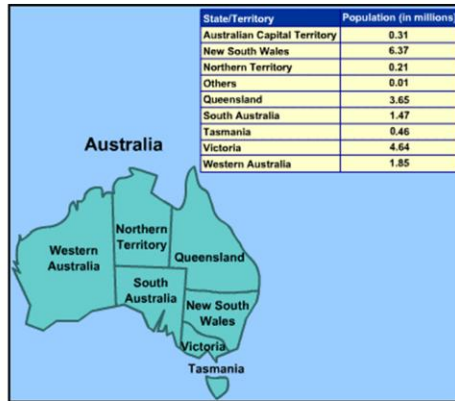
- What kind of graph is this?
- What does the part on the left mean?
- How do you read the data from the graph?

Discuss what the graph is used for and talk about each point to determine the correct answer.

- The correct answer is D

3. The table below lists the population of all Australian states and territories as of the 2001 Australian census. Based on the data and the map, determine which statement is true.

- A. The Australian population is evenly dispersed throughout the continent.
- B. The majority of people living in Western Australia live along the coast.
- C. The vast majority of the Australian population lives in the Eastern states.
- D. Very few people live in the desert.



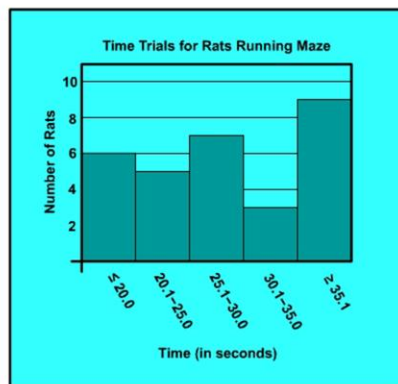
Discuss the components of this graph before reading the problem.

- Point out the column headings
- Discuss the diagram of the country and the different states outlined

Have students jot down the populations by region to determine the correct answer to the question.

- The correct answer is C

4. A scientist conducted an experiment with rats running through a maze. The histogram below shows the time it took the rats to complete the maze. What percent of the rats completed the maze in less than or equal to 30 seconds?



Gridded Response

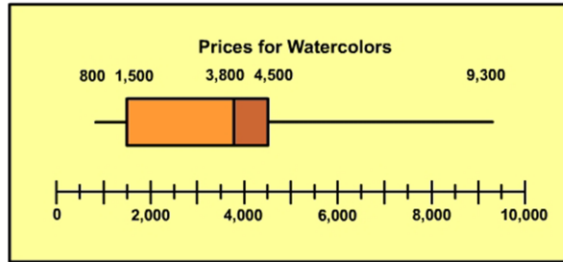
Discuss the components of this graph before reading the problem.

- What kind of graph is this?
- How do you read the data from the graph?

Discuss what the graph is used for and talk about each point to determine the correct answer.

- The correct answer is 60

5. The box-and-whisker plot shows the cost per painting of several famous watercolors that were recently sold by an art dealer. Alexandra purchased the most expensive of these watercolors, and Jose bought a watercolor at the median price. In dollars, how much more did Alexandra pay than Jose?



Gridded Response

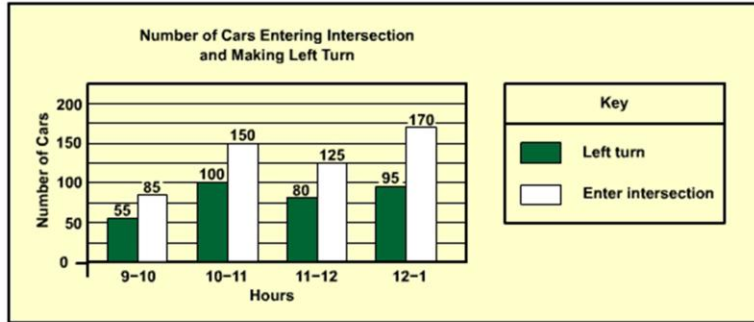
Discuss the components of this graph before reading the problem.

- What kind of graph is this?
- What does the part in the middle mean?
- How do you read the data from the graph?

Discuss what the graph is used for and talk about each point to determine the correct answer.

- The correct answer is 5500

6. Traffic at an intersection is being studied to find out how many cars enter the intersection and how many of them make a left turn between 9 a.m. and 1 p.m. The results are shown in the graph. During which hour did the greatest percentage of cars entering the intersection turn left?



- A. 9 –10
- B. 10 –11
- C. 11 –12
- D. 12 –1

Discuss the components of this graph before reading the problem.

- What kind of graph is this?
- What does the part on the right mean?
- How do you read the data from the graph?

Point out to the students that the problem is asking for the greatest percentage of cars turning left and not the greatest number. Discuss how to find the percentage for each of the four components in order to find the correct answer.

- The correct answer is B

7. Roger knows that in a family of three children he can expect 3 girls, 2 girls and 1 boy, 2 boys and 1 girl, or 3 boys. He flips a coin three times to simulate the three children in the family, a head represents a girl (G) and a tail represents a boy (B). The results of his experiments are shown in the table. Which number of trials most closely approximates the expected values distribution?

	Expected values	Number of trials			
		10	50	100	200
G,G,G	1	2	4	15	25
G,G,B; G,B,G; B,G,G	3	4	23	41	77
B,B,G; B,G,B; G,B,B	3	2	18	32	74
B,B,B	1	2	5	12	24

- A. 10 trials
- B. 50 trials
- C. 100 trials
- D. 200 trials

Discuss the components of this graph before reading the problem.

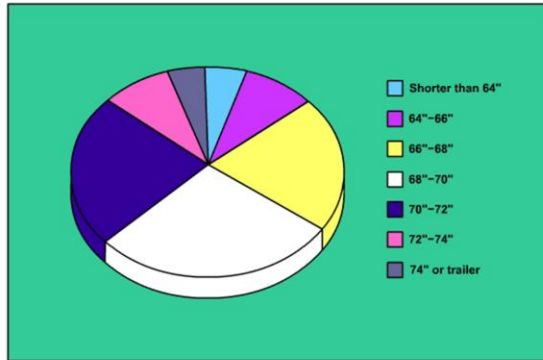
- What do the various letters on the left represent?
- How did they come up with the expected values?
- How are the expected values compared to each other?

Discuss with the students what the expected values distribution means in order to find the correct answer.

- The correct answer is D.

8. The circle graph below shows the distribution of height among U.S. males. Based on this graph, which statement must be TRUE?

- A. There are no U.S. men under 5 feet 0 inches tall.
- B. Approximately half of U.S. men are between 5 feet 6 inches and 5 feet 10 inches tall.
- C. Most U.S. men are shorter than 5 feet 8 inches.
- D. More than half of U.S. men are taller than 6 feet 0 inches.



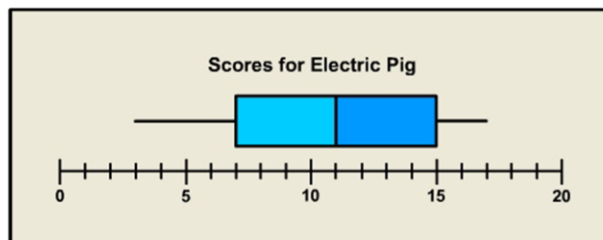
Discuss the components of this graph before reading the problem.

- What kind of graph is this?
- What does the part on the right mean?
- How do you read the data from the graph?

Discuss what the graph is used for and talk about each statement to determine the correct answer.

- The correct answer is B.

9. Electric Pig is an Ultimate Frisbee team from Washington, D.C. The box-and-whisker plot below shows the number of points that were scored against Electric Pig in each of their games during the Fall 2004 season. They played 31 games during the season. If the number of points were arranged in order from least to greatest, which score would be in the 24th position?



Gridded Response

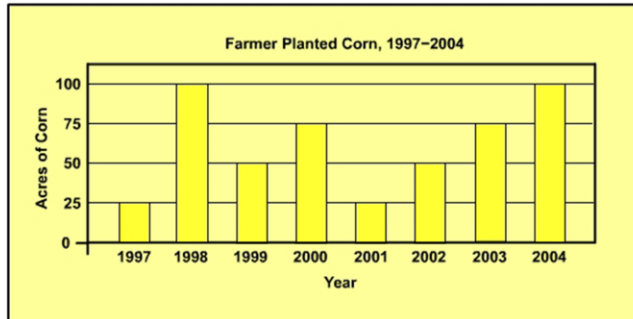
Discuss the components of this graph before reading the problem.

- What kind of graph is this?
- What do the two boxes mean?
- What do the two lines mean on the ends?
- How do you read the data from the graph?

Discuss what the graph is used for and talk about each point to determine the correct answer.

- The correct answer is 15.

10. The graph shows the number of acres a farmer planted in corn from 1997 to 2004. During what year did the number of acres planted in corn increase by 100% from the previous year?



Gridded Response

Discuss the components of this graph before reading the problem.

- What kind of graph is this?
- What does it mean for something to increase by 100%.

Discuss what the graph is used for and talk about each point to determine the correct answer.

- The correct answer is 2002.

11. A psychologist conducted a study of teenagers' visualization and pattern matching skills. The results of his test are shown in the table below. What is the probability, expressed as a fraction in lowest terms, that a randomly selected participant is either above average in both categories or below average in both categories?

		Visualization	
		Above Average	Below Average
Pattern Matching	Above Average	16	21
	Below Average	6	17

Gridded Response

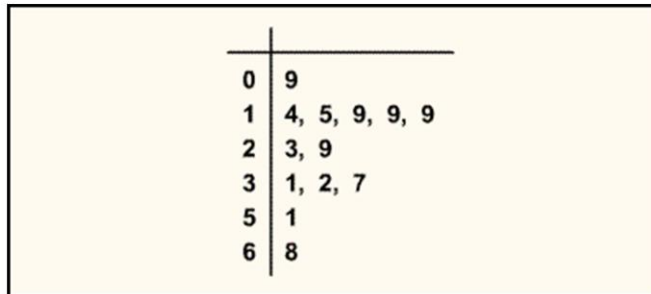
Discuss the components of this graph before reading the problem.

- How many teenagers participated in this study?
- How many teenagers were above average in both categories?
- How many teenagers were below average in both categories?

Discuss what the graph is used for and talk about each point to determine the correct answer.

- The correct answer is 11/20.

12. The *Mistral* is a strong wind that blows through the Rhone Valley in France. It can reach speeds up to 93 miles per hour! The stem-and-leaf plot below shows the top wind speed of the Mistral for 13 consecutive days. **In miles per hour**, what was the median wind speed of the Mistral during this period?



Gridded Response

Discuss the components of this graph before reading the problem.

- What does median mean?
- How can you find the median when data is presented in this manner?
- How do you read the data from the graph?

Discuss what the graph is used for and talk about each point to determine the correct answer.

- The correct answer is 23.

13. The table shows the number of weeks in a year that the attendance at Disney World reaches certain levels. Which level is the mode?

How crowded	Level	Number of weeks
Semi private	1	18
Moderate	2	13
Heavy	3	19
Elbow to elbow	4	2

Gridded Response

Discuss the components of this graph before reading the problem.

- What does mode mean?
- What level had the highest crowds the most during the year?

Discuss what the graph is used for and talk about each point to determine the correct answer.

- The correct answer is 3.

14. The ages of some of the 11 passengers on a bus are shown in the graph. The youngest is 2 years old. The mode is 3, the median is 4, and the mean is 5. What is the greatest possible age of the oldest person?



Gridded Response

Discuss the components of this graph before reading the problem.

- How many students are currently represented on the graph?
- What does it mean if the mode is 3?
- What does it mean if the median is 4?
- How could we get a mean of 5 if data is missing?

Discuss what the graph is used for and talk about each point to determine the correct answer.

- The correct answer is 14.

15. The graph shows the direct hurricane hits on Florida from 1851 to 2004 by category number. What is the median category number for direct hurricane hits on Florida?

Category	Number of Hurricanes
5	2
4	6
3	27
2	32
1	43

Gridded Response

Discuss the components of this graph before reading the problem.

- How many hurricanes hit Florida during the time span?
- What does the median mean?
- How can we find the median when data is presented in this manner?

Discuss what the graph is used for and talk about each point to determine the correct answer.

- The correct answer is 2.