SOL 6.14 – Circle Graphs

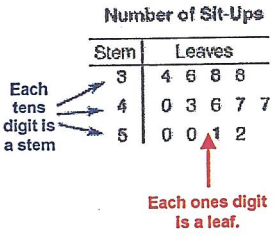
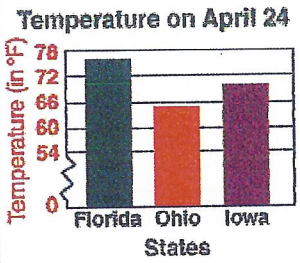
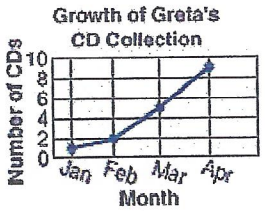
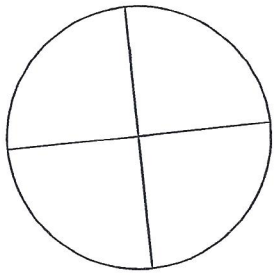
6.14 The student, given a problem situation, will

a) construct circle graphs;
b) draw conclusions and make predictions, using circle graphs; and
c) compare and contrast graphs that present information from the same data set.

Understanding the Standard:

- To collect data for any problem situation, an experiment can be designed, a survey can be conducted, or other data-gathering strategies can be used. The data can be organized, displayed, analyzed, and interpreted to answer the problem.
- Different types of graphs are used to display different types of data.
- Bar graphs use categorical (discrete) data (e.g., months or eye color).
- Line graphs use continuous data (e.g., temperature and time).
- Circle graphs show a relationship of the parts to a whole.
- All graphs include a title, and data categories should have labels.
- A scale should be chosen that is appropriate for the data.
- A key is essential to explain how to read the graph.
- A title is essential to explain what the graph represents.
- Data are analyzed by describing the various features and elements of a graph.

SOL 6.14 – Graphs

Stem & Leaf	Bar Graph	Line Graph	Circle Graph
Title, scale, key	Title, scale, key, category labels	Title, scale, key, category labels	Title, scale, key, category labels
Used to display the distribution and frequency of data	Used to display categorical data	Used to display continuous data	Used to display the relationship of the parts to a whole
Find range, median, and mode	Ex: months, eye color, food, movies	Ex: time and temperature	Ex: Budget, Percentages
			

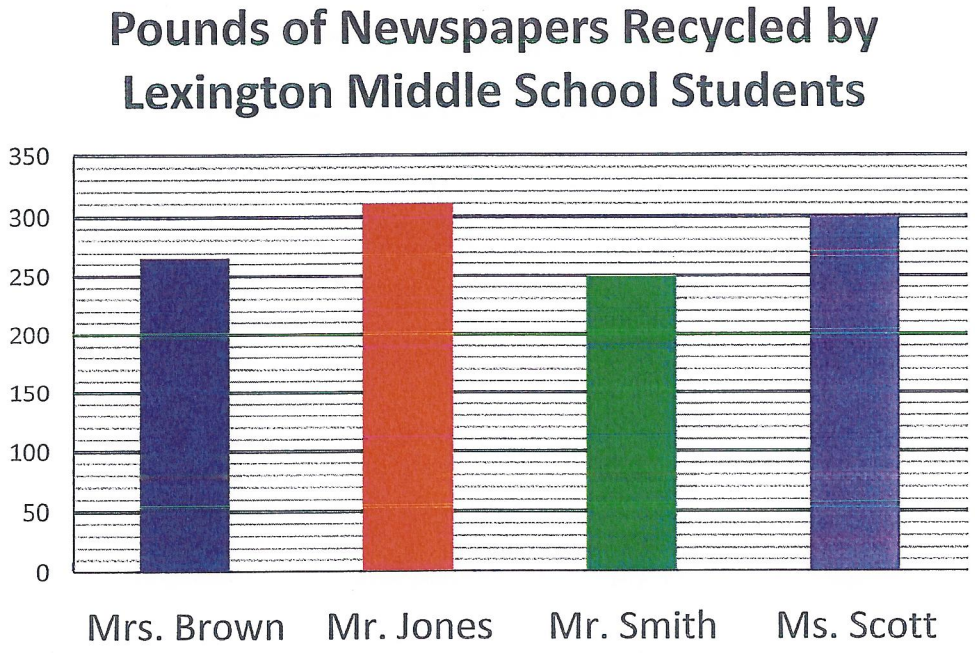
Circle graphs represent parts of a whole

To determine the percentage of each section of the circle graph, divide the number that represents the whole circle by the number that represents each part of the circle.

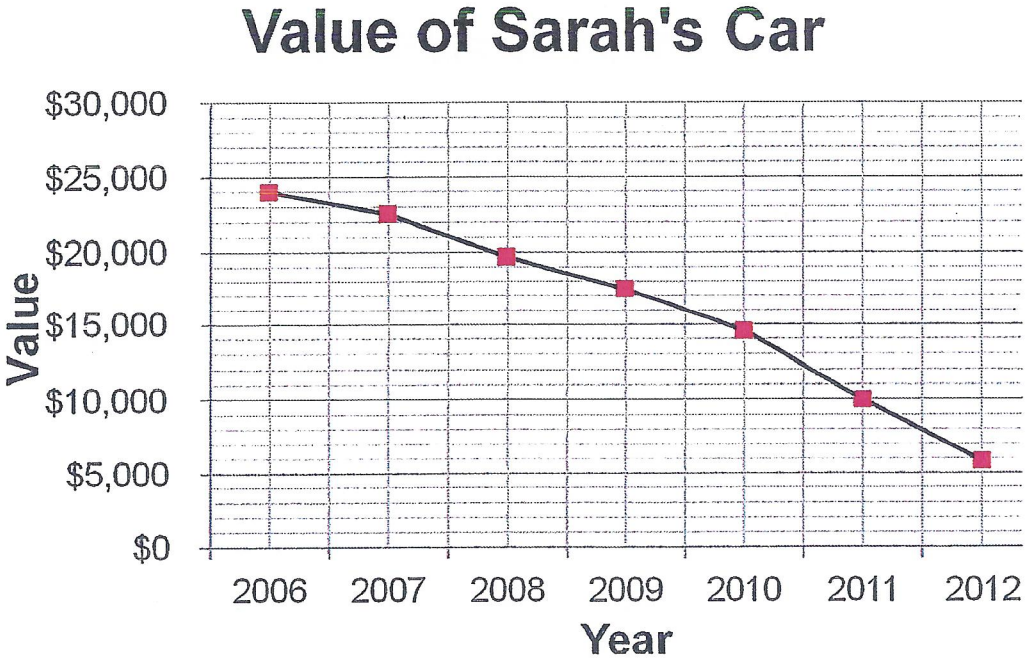
$$\frac{\text{Part}}{\text{Whole}} = \frac{\%}{100} = \frac{\quad}{360}$$

Vocabulary:

Bar Graph = categories



Line Graph = time & temp



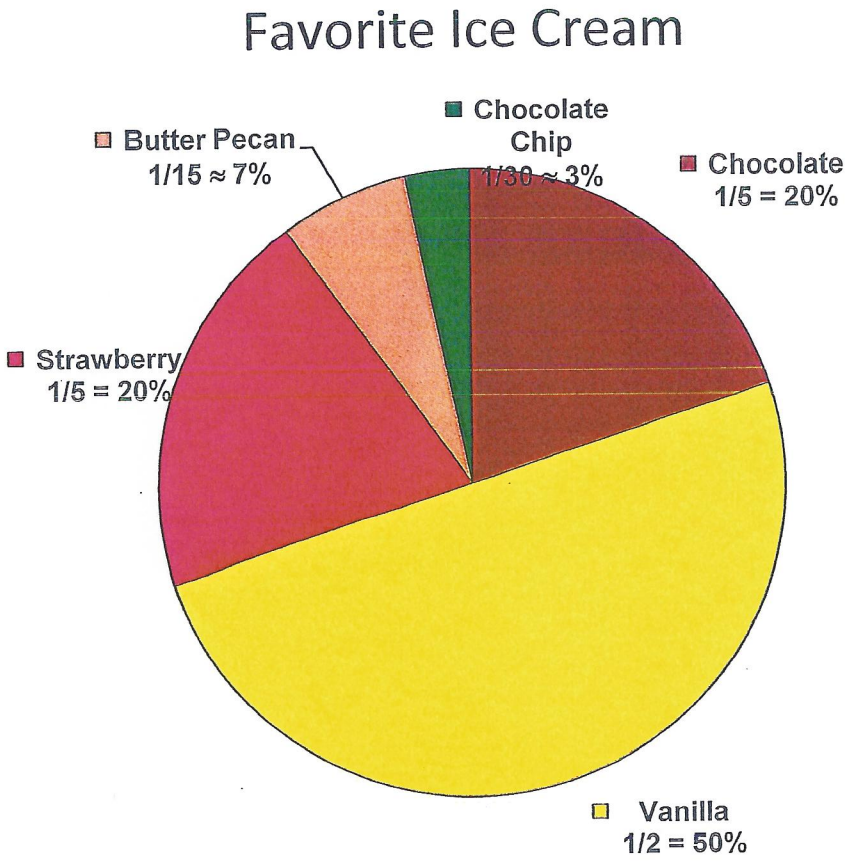
Stem-and-Leaf Plot

Math Test Scores: 56, 65, 98, 82, 64, 71, 78, 86, 95, 91, 59, 70, 80, 92, 76, 82, 85, 91, 92, 73

STEM	LEAF
5	6 9
6	4 5
7	0 1 3 6 8
8	0 2 2 5 6
9	1 1 2 2 5 8

Key: 5|6 means 56

Circle Graph = relationship to the whole



Essential Understandings:

What types of data are best presented in a circle graph?

Circle graphs are best for data showing a relationship of the parts of the whole.

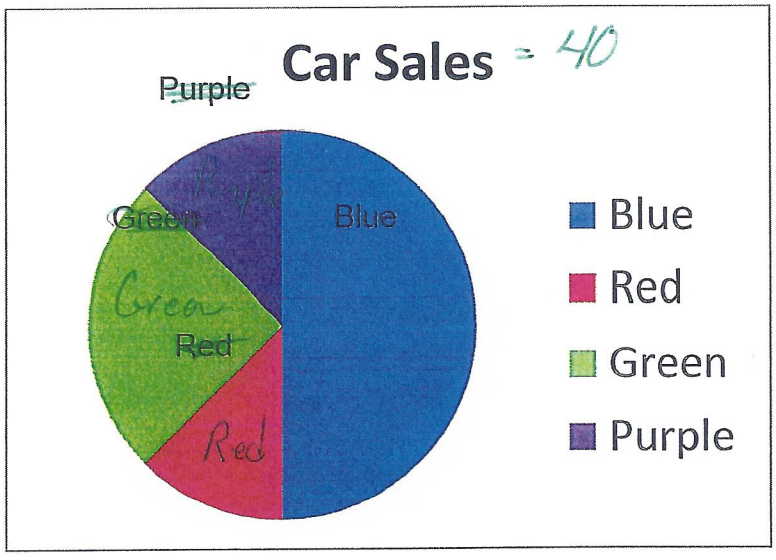
Essential Knowledge & Skills:

The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to

- Collect, organize and display data in circle graphs by depicting information as fractional.
- Draw conclusions and make predictions about data presented in a circle graph.
- Compare and contrast data presented in a circle graph with the same data represented in other graphical forms.

Practice:

A car salesman sold 40 cars last month. The circle graph shows the results of his sales by car color.



1. Identify the car color that most likely represents exactly 10 cars.

Green

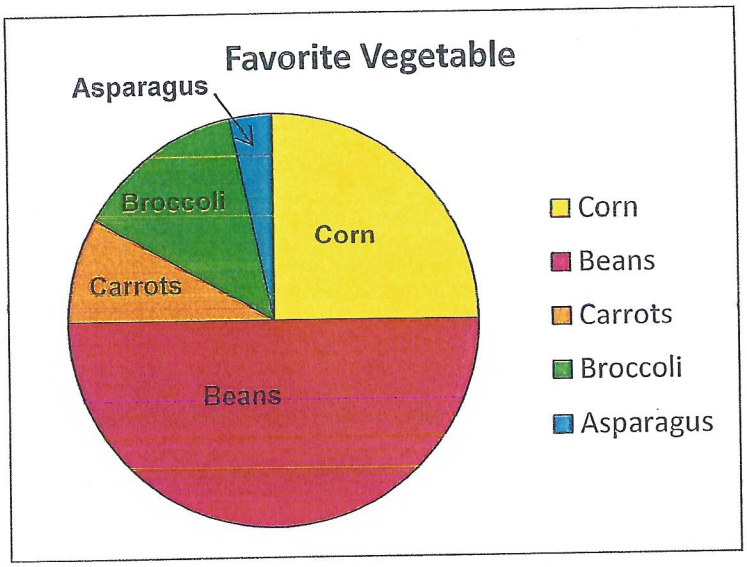
2. Identify two car colors that most likely represent a combined total of 25 cars.

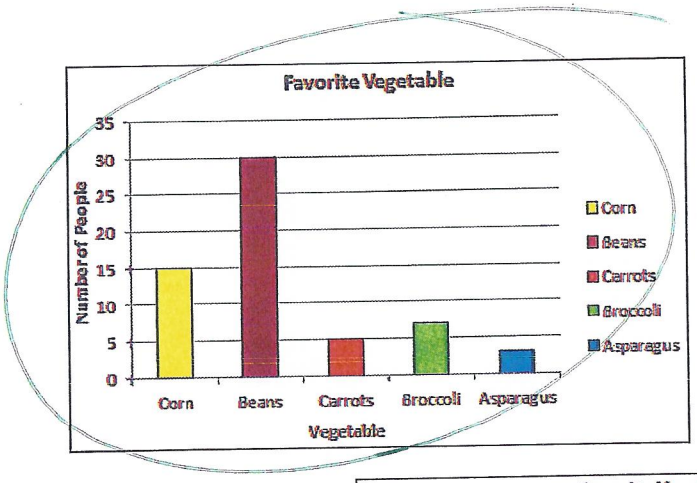
Blue + Purple

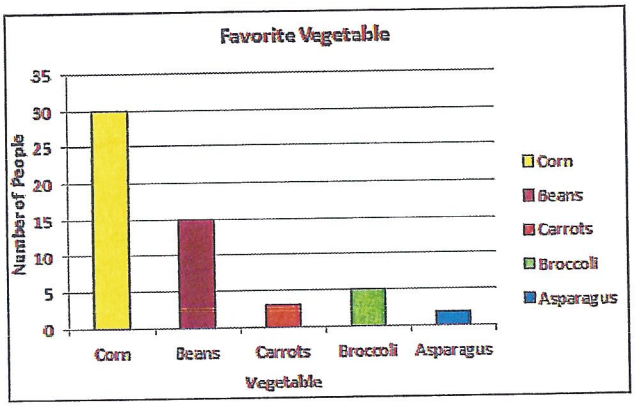
or

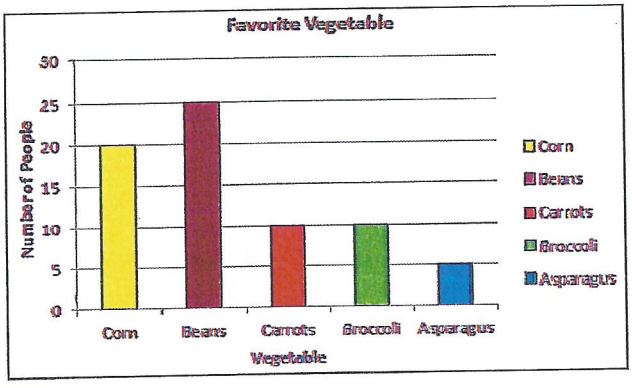
Blue + Red

Bob asked a group of people to identify their favorite vegetable. The circle graph shows the results. Which graph could represent the same data?

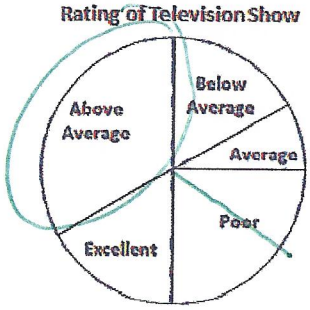








Mr. Walker surveyed 24 students. He asked each student to rate a television show. The results are shown in this circle graph.

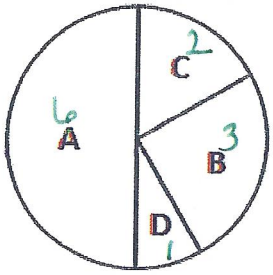


Which fraction of the students best represents those who rated the show as "Above Average?"

A $\frac{3}{4}$ B $\frac{1}{5}$ C $\frac{1}{3}$ D $\frac{2}{3}$

Twelve students answered a question that had answer choices labeled as A, B, C, and D. This circle graph represents the answer choices selected by the 12 students.

Answer Choices Selected



Which of these represents the data shown in the circle graph?

A

Answer Choices Selected

Answer Choice	Number of Students Selecting Choice
A	●●●●●● ✓6
B	●●●
C	●●
D	●

Key: ● = 2 students

C

Answer Choices Selected

Answer Choice	Number of Students Selecting Choice
A	●● X 2
B	●◖
C	●
D	●

Key: ● = 2 students

B

Answer Choices Selected

Answer Choice	Number of Students Selecting Choice
A	●●● X 3
B	●◖
C	●
D	◖

Key: ● = 2 students

D

Answer Choices Selected

Answer Choice	Number of Students Selecting Choice
A	●●●●● X 5
B	●●●●
C	●●
D	●

Key: ● = 2 students