

HIGH SCHOOL Math TEKS FOCUS
Objective Nine

8.3(B)

Estimate and find solutions to application problems involving percents and proportional relationships such as similarity and rates

- 15** Bobby saved \$32 when he purchased a jacket at a clearance sale. If the sale price was 40% off the regular price, what was the regular price of the jacket?

A \$48
B \$72
C \$80
D \$128

8.3B 8th Grade 2003

- 27** Vanita can read an average of 18 pages during a 30-minute reading period at school. At this rate, approximately how long will it take her to read a 380-page book?

A 11 h
B 21 h
C 23 h
D 42 h

8.3B 8th Grade 2003

- 21** Sheila made a scale drawing of a room. The actual room has a width of 16 feet and a length of 24 feet. Her drawing has a length of 3 inches. What is the width, in inches, of the scale drawing of the room?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

8.3B 8th Grade 2004

- 24** Mr. Johnson is considering renting an office that has 325 square feet of space. The rent is \$1,300 per month. A larger office in the same building is available for \$2,100 per month at the same rate per square foot as the smaller office. What is the area of the larger office?

F 525 ft²
G 1,625 ft²
H 3,400 ft²
J 840 ft²

8.3B 8th Grade 200

- 17** A couple bought a house and calculated that they would pay 30% of their combined monthly income of \$5,569.75 toward the monthly mortgage payment on the house. Approximately how much will the couple pay for their monthly mortgage payment?

A \$186
B \$1,671
C \$3,899
D \$18,566

8.3B 9th Grade 2003

- 35** A watch loses 3 minutes every 24 hours. How much time will it lose in 2 hours?

A 1.6 seconds
B 5 seconds
C 15 seconds
D 22.5 seconds

8.3B 9th Grade 2003

HIGH SCHOOL Math TEKS FOCUS
Objective Nine

11 Antonio works 40 hours per week at Electronics Warehouse. He earns \$6.50 per hour plus a 3% commission on the total dollar value of the service contracts he sells. If Antonio's hourly rate were increased by \$0.15 and his commission were raised to 5%, how much would he earn if he sold \$4000 worth of service contracts for the week?

- A** \$126.50
- B** \$206.65
- C** \$466.00
- D** \$580.00

8.3B 9th Grade 2004

6 The world's fastest flying insect is the dragonfly. It can fly 36 miles per hour. If a dragonfly flew in a straight path at this rate, what distance would it fly in 15 minutes?

- F** 2 mi
- G** 9 mi
- H** 25 mi
- J** 540 mi

8.3B 10th Grade 2003

42 Mr. Salinas, a real estate agent, received a 5% commission on the selling price of a house. If his commission was \$6,975, what was the selling price of the house?

- F** \$7,342
- G** \$34,875
- H** \$139,500
- J** \$662,625

8.3B 10th Grade 2003

29 Of the 32 students in Mrs. Zane's class, 25% have brown hair. Of the remaining students, 12.5% have red hair. How many students in Mrs. Zane's class have red hair?

- A** 3
- B** 4
- C** 21
- D** Not here

8.3B 10th Grade 2004

18 Olivero is choosing between two brands of AAA batteries for his graphing calculator. A package of three Brand M batteries costs \$5.50, and a package of three Brand P batteries costs \$3.85. What percent of the cost of Brand M batteries did Olivero save by buying a package of Brand P batteries?

- F** 17%
- G** 30%
- H** 43%
- J** 70%

8.3B 11th Grade 2003

35 Two race cars travel at constant speeds in the same direction around a track. The faster car travels 186 miles per hour and completes 50 laps each time the slower car completes 47.6 laps. Which is a reasonable estimate of the slower driver's speed?

- A** Between 180 mph and 185 mph
- B** Between 175 mph and 180 mph
- C** Between 145 mph and 150 mph
- D** Between 135 mph and 140 mph

8.3B 11th Grade 2004

HIGH SCHOOL Math TEKS Focus
Objective Nine

- 39** Amber is making a patchwork quilt using 3 different types of fabric. Each type of fabric is cut into rectangles. The first fabric is cut into pieces measuring 3 inches by 5 inches. The dimensions of the rectangles of the second type of fabric are 125% those of the first type, and the dimensions of the third type of fabric are 125% those of the second. What are the approximate dimensions of the third type of fabric?
- A** 3.75 in. by 6.25 in.
B 4.69 in. by 7.81 in.
C 5.50 in. by 7.50 in.
D 4.25 in. by 6.25 in.

8.3B 11th Grade 2004

8.11(A)

Find the probabilities of compound events (dependent and independent)

- 22** A spinner and a fair number cube are used in a game. The spinner has an equal chance of landing on 1 of 4 colors: red, purple, blue, or green. The faces of the cube are labeled 1 through 6. What is the probability of a player spinning the color red and then rolling a 5 or 6?
- F** $\frac{3}{10}$
G $\frac{1}{8}$
H $\frac{1}{12}$
J $\frac{1}{24}$

8.11A 8th Grade 2003

- 30** Fidel tosses four fair coins. What is the probability that all four coins will land heads up?

F $\frac{1}{16}$

G $\frac{1}{8}$

H $\frac{1}{4}$

J $\frac{1}{2}$

8.11A 8th Grade 2004

- 36** At Reyna High School 50% of the students eat lunch in the school cafeteria. In the same school 10% of the students participate in sports. What is the probability that a student selected at random eats in the school cafeteria and participates in sports?

F $\frac{1}{2}$

G $\frac{1}{10}$

H $\frac{1}{20}$

J $\frac{1}{60}$

8.11A 9th Grade 2003

High School Math TEKS Focus
Objective Nine

15 Jared has a white cube and a red cube. The surfaces of each cube are numbered with a unique number from 1 to 6. If Jared tosses the cubes, what is the probability he will get a 4 on the white cube and an odd number on the red cube?

A $\frac{1}{12}$

B $\frac{1}{3}$

C $\frac{1}{2}$

D $\frac{2}{3}$

8.11A 10th Grade 2003

2 In a high school auditorium, 1 junior and 2 sophomores are seated randomly together in a row. What is the probability that the 2 sophomores are seated next to each other?

F $\frac{1}{9}$

G $\frac{1}{3}$

H $\frac{2}{3}$

J $\frac{5}{6}$

8.11A 11th Grade 2004

14 Jamal has a game with 2 groups of tiles. The first group of 26 tiles is labeled with all the letters of the alphabet. The second group of 10 tiles is numbered 0 through 9. If Jamal draws 1 letter tile and 1 number tile at random, what is the probability that he will draw a letter in his name and an odd number?

F $\frac{1}{13}$

G $\frac{5}{52}$

H $\frac{1}{4}$

J $\frac{7}{26}$

8.11A 11th Grade 2004

HIGH SCHOOL Math TEKS FOCUS Objective Nine

8.11(B)

Use theoretical probabilities and experimental results to make predictions and decisions

- 8 The results of a random survey showed that 42 out of 80 people plan to vote for Mr. Vu for city council. Which is the best prediction of the total number of votes he will receive if 2,000 people vote?

F 25
G 50
H 120
J 1,000

8.11B 8th Grade 2003

- 4 Last basketball season Ricky made 58% of the free throws he attempted. In the first game this season, Ricky went to the free-throw line 10 times. About how many free throws did Ricky make if his success rate from last season continued?

F 58
G 10
H 6
J 4

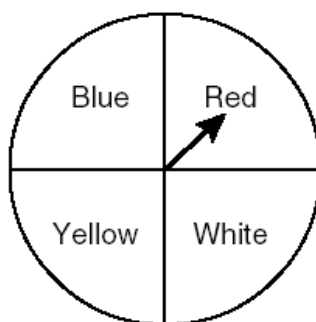
8.11B 9th Grade 2003

- 49 The probability of a table-tennis ball being defective is $\frac{1}{10}$. About how many balls would be defective in a case of 725 table-tennis balls?

A 1
B 7
C 73
D 80

8.11B 8th Grade 2004

- 32 A spinner was spun 20 times. The results are shown in the table below.



Spinner Results

Red	7
White	5
Blue	4
Yellow	4

Which color on the spinner has the same experimental probability as theoretical probability?

F Red
G White
H Blue
J Yellow

8.11B 9th Grade 2004

HIGH SCHOOL Math TEKS FOCUS
Objective Nine

- 43** The table below shows the results of a number cube being rolled.

Outcome	Frequency
1	6
2	2
3	2
4	3
5	2
6	0

Based on these results, what is the experimental probability of rolling a 1?

- A** 2.5%
- B** $\frac{1}{6}$
- C** $\frac{2}{5}$

D 0.6

8.11B 10th Grade 2004

- 26** The student council at Monroe High School is planning a schoolwide trip. A local roller-skating rink will provide a discounted rate if at least 250 of the school's 2340 students sign up for the trip. The student council surveyed a random sample of students and asked which of the following activities the students would prefer as a school trip.

Survey Results

Activity	Students
Skating	20
Bowling	30
Watching a movie	110
Swimming	40

Based on the data in the survey, how many students are likely to choose skating?

- F** 234
- G** 260
- H** 351
- J** 468

8.11B 11th Grade 2004

HIGH SCHOOL Math TEKS FOCUS
Objective NINE

8.12(A)

Select the appropriate measure for central tendency to describe a set of data for a particular purpose

- 17 The following table shows the number of pages in novels that Chloe read for pleasure each month during the school year.

Chloe's Novel Reading

Month	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April
Number of Pages Read	370	393	380	376	396	372	385	391

If Chloe read only 125 pages during the month of May, which measure of data changed the most?

- A The mean
- B The median
- C The mode
- D All measures were affected equally.

8.12A 8th Grade 2003

- 18 A retail store had total sales of \$436, \$650, \$530, \$500, \$650, \$489, and \$423 last week. Which measure of data would make the store's sales last week appear the most profitable?

- F Mode
- G Median
- H Mean
- J Range

8.12A 8th Grade 2004

HIGH SCHOOL Math TEKS Focus
Objective Nine

18 Given the set of data {20, 15, 10, 20, 15, 10, 20, 20, 50}, which statement best interprets the data?

- F Only the mean is 20.
- G The range of the set of data is 20.
- H The mean, median, and mode are all 20.
- J The mode and median are not the same.

8.12A 10th Grade 2003

34 Nicholas earned the following grades on his science exams: 83, 88, 87, and 83. If Nicholas scores a 90 on his last exam, which measure of central tendency will give him the highest score?

- F Mode
- G Median
- H Range
- J Mean

8.12A 10th Grade 2004

8 An automobile dealer is analyzing a frequency table identifying the number of vehicles of each color sold during the last 6 months. Which measure of data describes the most popular color of vehicle sold?

- F Mean
- G Median
- H Mode
- J Range

8.12A 11th Grade 2003

HIGH SCHOOL Math TEKS FOCUS
Objective Nine

8.12(C)

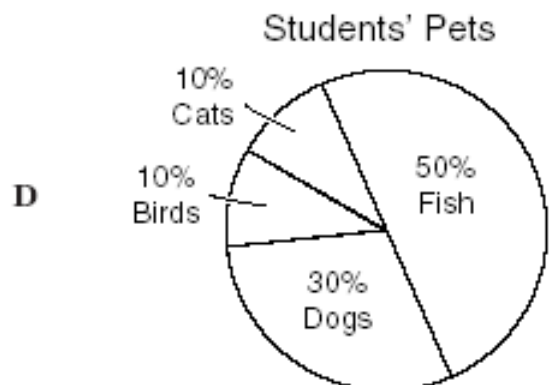
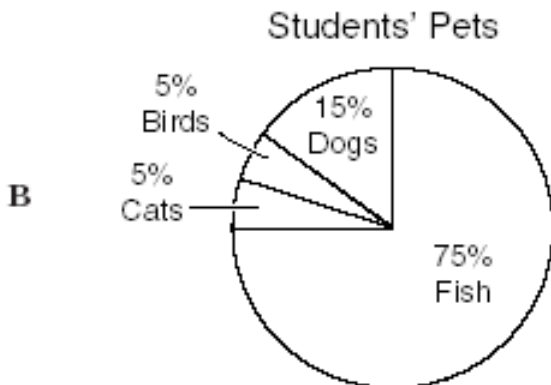
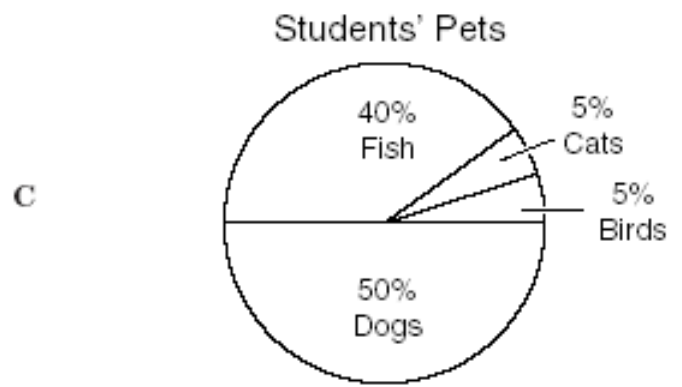
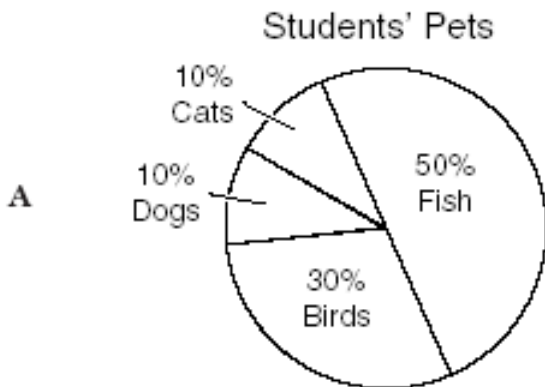
Construct circle graphs, bar graphs, and histograms, with and without technology

- 3 Mr. Dansiger surveyed the students in his science classes about the type and number of pets they owned. The table shows the results of the survey.

Students' Pets

Type of Pet	Cat	Dog	Bird	Fish
Number of Pets	30	90	30	150

Which circle graph best represents the type and number of pets reported by students in the survey?



8.12C 8th Grade 2003

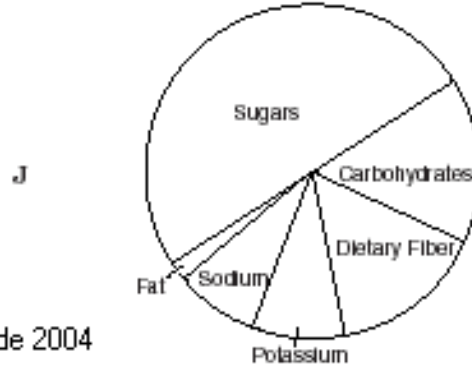
HIGH SCHOOL Math TEKS FOCUS Objective Nine

- 4 Miss Koziel eats a bowl of her favorite cereal every morning. The table below shows the nutritional content of one serving of this cereal.

Cereal's Nutritional Content

Nutrition	Percent of Serving
Fat	2%
Sodium	11%
Potassium	12%
Carbohydrates	17%
Dietary Fiber	16%
Sugars	42%

Which circle graph best represents these data?



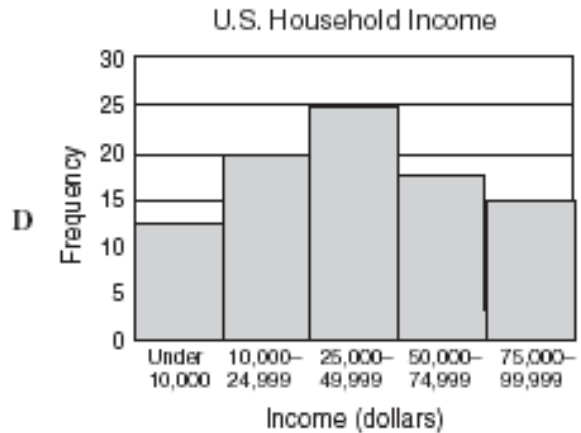
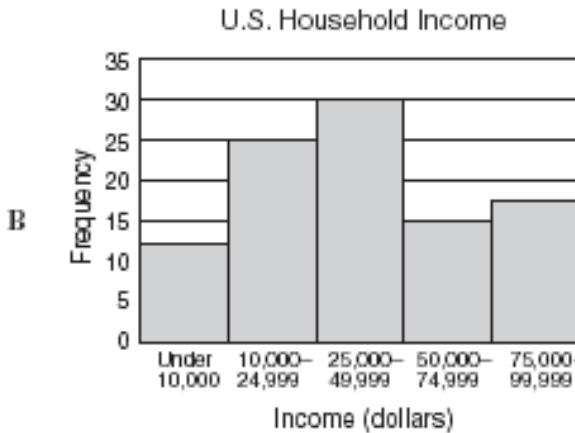
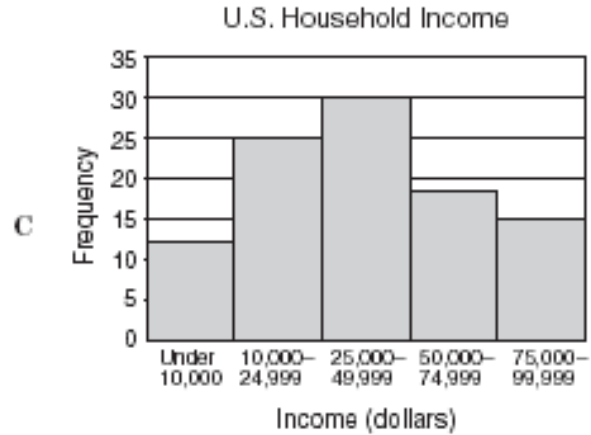
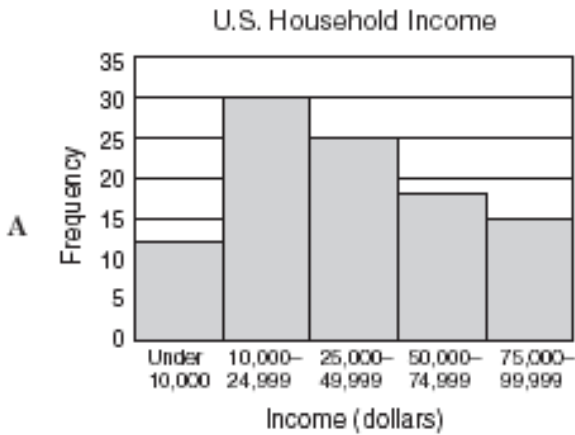
8.12C 8th Grade 2004

HIGH SCHOOL Math TEKS FOCUS

Objective Nine

51 Which histogram best reflects the data shown in the table?

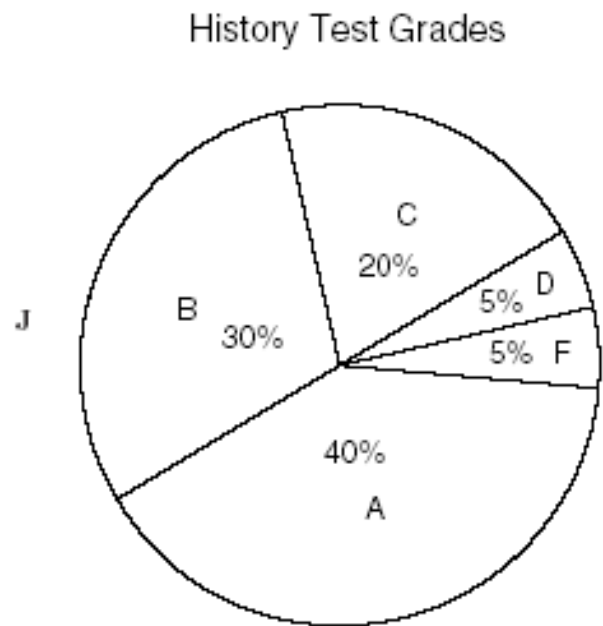
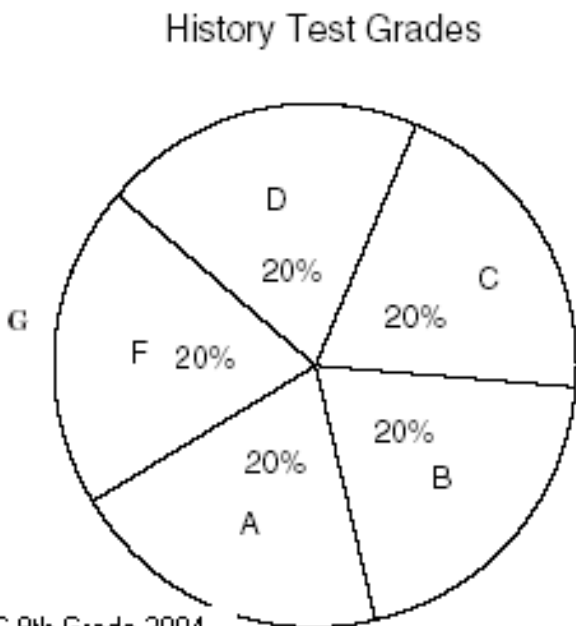
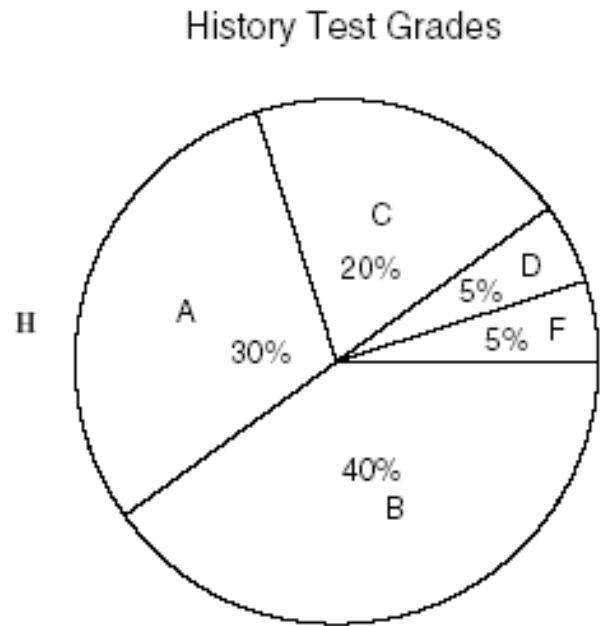
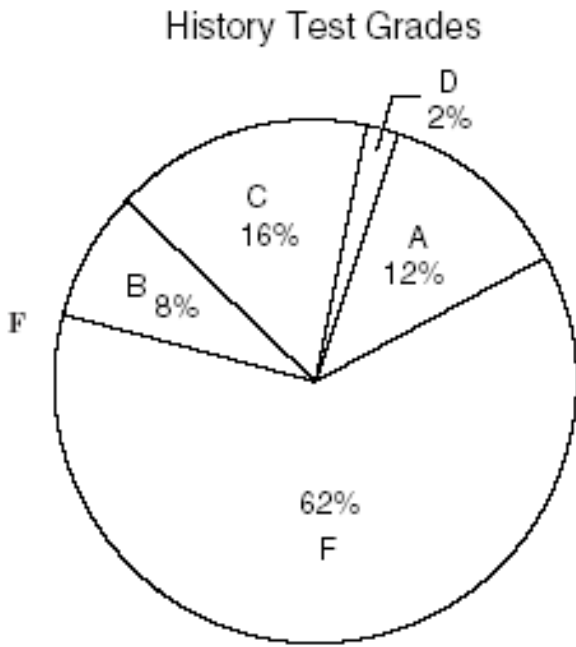
U.S. Household Income	
Income Range	Frequency
Under \$10,000	
\$10,000–24,999	
\$25,000–49,999	
\$50,000–74,999	
\$75,000–99,999	
Total	100 Households



8.12C 9th Grade 2003

HIGH SCHOOL Math TEKS FOCUS Objective Nine

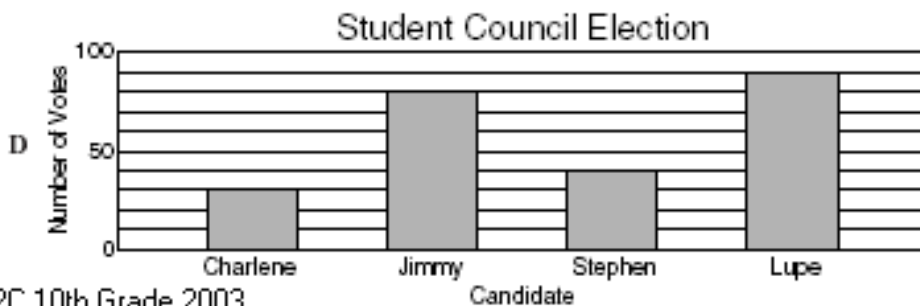
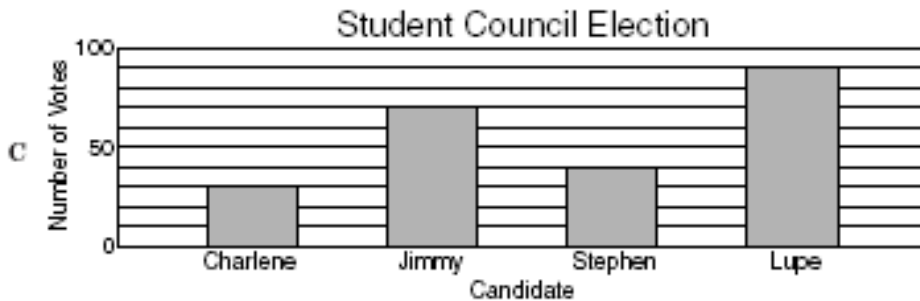
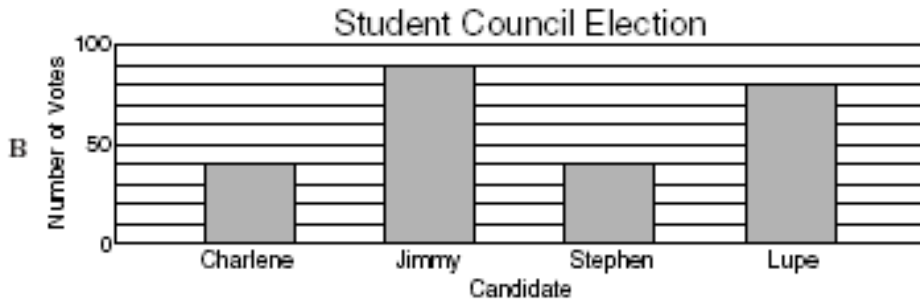
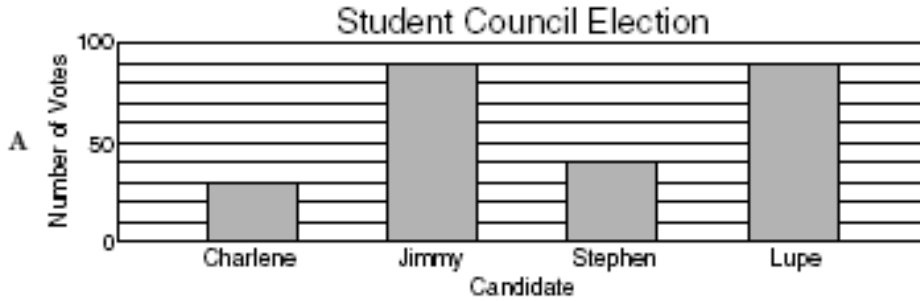
- 40 Students in two honors history classes took their first test. Of 40 students taking the test, 12 received an A, 16 received a B, 8 received a C, 2 received a D, and the remaining received an F. Which circle graph best represents these data?



8.12C 9th Grade 2004

HIGH SCHOOL Math TEKS FOCUS Objective Nine

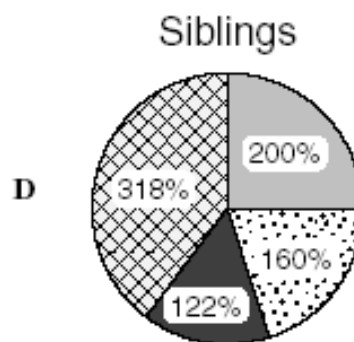
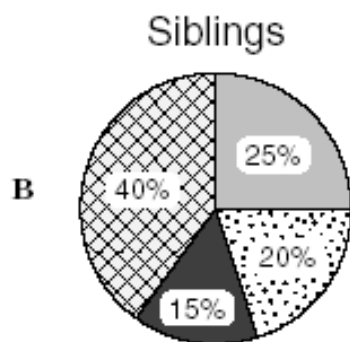
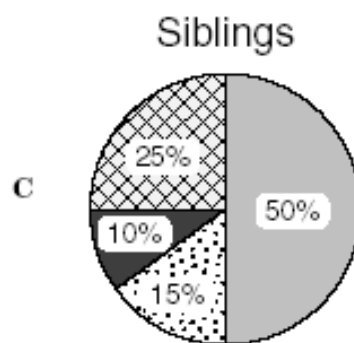
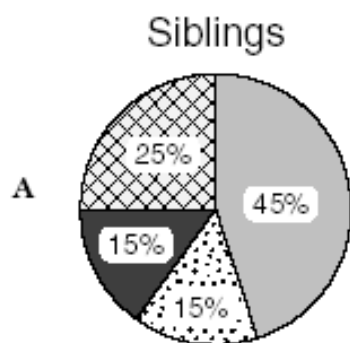
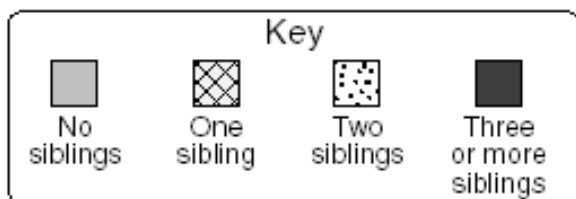
- 39 The student election committee at Chesterfield High School recorded the number of votes that each of 4 presidential candidates received in the student council election. A total of 240 students voted. Charlene received 12.5% of the votes, Jimmy received 33.3%, Stephen received 16.7%, and Lupe received 37.5%. Which bar graph best represents the number of votes each presidential candidate received in the student council election?



8.12C 10th Grade 2003

HIGH SCHOOL Math TEKS Focus Objective Nine

- 3 Of the 800 students at a local high school, 200 students have no siblings, 318 students have one sibling, 160 students have two siblings, and the rest of the students have three or more siblings. Use the key below to find the circle graph that best represents this information.



8.12C 10th Grade 2004

HIGH SCHOOL Math TEKS FOCUS Objective Nine

- 5 The manager of a sandwich shop is planning to make a circle graph showing the types of sandwiches sold in one day. The table below summarizes these data.

Sandwiches Sold in One Day

Roast beef	195
Turkey-and-cheese	125
Ham-and-cheese	75
Vegetable	50
Other	55

What central angle should the manager use for the section representing the ham-and-cheese sandwich?

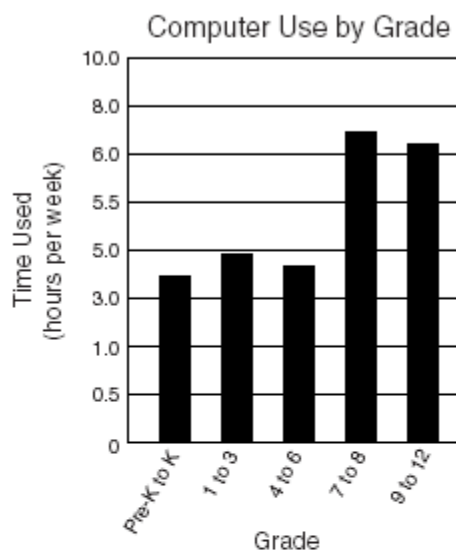
- A 270°
- B 75°
- C 54°
- D 15°

8.12C 11th Grade 2003

8.13(B)

Recognize *misuses of graphical or numerical information and evaluate predictions and conclusions based on data analysis*

- 16 The bar graph shows the average number of hours per week that students in different grades use computers.



Which statement best explains why a person reading the graph might get an incorrect idea about the differences in the number of hours computers are used by students in the grades shown?

- F The title of the graph is misleading.
- G The grade intervals do not show how much time college students use computers.
- H The vertical scale should show minutes of computer use instead of hours.
- J The intervals on the vertical scale are not consistent.

8.13B 8th Grade 2003

High School Math TEKS Focus Objective Nine

- 41 A clothing store surveyed 100 boys aged 12 to 16 about their preferred T-shirt colors. The results are shown in the table.

T-Shirt Colors

Color	Frequency
Purple	35
Orange	45
Green	15
Yellow	5

If the store uses only these data to order T-shirts, which conclusion best reflects the data collected?

- A More than half of each order should be orange T-shirts.
- B More than half of each order should be purple T-shirts and orange T-shirts.
- C Only purple T-shirts and orange T-shirts should be ordered.
- D About a third of the order should be green T-shirts and yellow T-shirts.

8.13B 8th Grade 2003

- 3 The table shows the results of a survey given to 450 graduating seniors about their educational plans after high school.

Educational Plans

Institution	Percent
University	44
Community college	26
Technical school	15
Undecided	15

Based on these data, which of the following statements is true?

- A Only 15 students have no future educational plans.
- B More students plan to attend a community college or technical school than plan to attend a university.
- C Fewer than half of the students plan to attend a university.
- D Fewer than one-fourth of the students plan to attend a community college.

8.13B 9th Grade 2004

HIGH SCHOOL Math TEKS FOCUS Objective Nine

39 The table below shows the population and the area in square miles of some U.S. states.

State	Population	Area (square miles)
Alaska	626,932	591,004
California	33,871,648	155,973
Florida	15,982,378	58,560
Montana	902,105	147,137
New Jersey	8,414,350	7,836
Texas	20,851,830	267,338

Which statement best describes the relationship between the population and the area of a state?

- A The larger a state's area, the larger its population is.
- B No relationship can be determined from the data in the table.
- C New Jersey has the smallest population of the states in the table because it has the smallest area.
- D Texas is the largest U.S. state.

8.13B 10th Grade 2004

45 The graph below displays the weights of packages shipped from a post office on Tuesday.



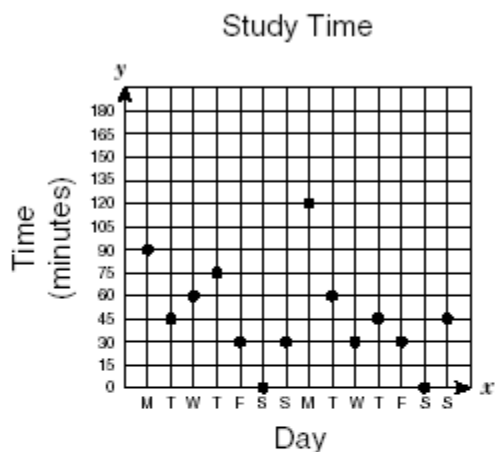
According to information in the graph, no 10- to 12-pound packages were shipped. Which statement explains why this representation may be inaccurate?

- A The scale for the number of packages does not start at 0.
- B The vertical bars are too wide.
- C The intervals are too small.
- D The scale for the number of packages goes higher than 90.

8.13B 8th Grade 2004

HIGH SCHOOL Math TEKS FOCUS Objective Nine

- 14 The graph below shows the amount of time Dennis spent studying over a 2-week period in October.



Which of the following statements would be an invalid conclusion for these data?

- F Dennis spent a total of 660 minutes studying.
- G Dennis studied for an average of about 47 minutes per day.
- H Dennis studied for an average of 330 minutes per week.
- J Dennis earned good grades during this 2-week period.

8.13B 9th Grade 2004

- 38 In a survey of 80 nutritionists, 8 said they eat tacos. Of the 8 who said they eat tacos, 2 said they eat Brand A tacos. If an advertisement for Brand A tacos states “25% of the nutritionists surveyed eat Brand A tacos,” which conclusion is valid based on the information given?

- F The ad is accurate because 2 out of 8 nutritionists is 25%.
- G The ad is accurate because nutritionists are food experts.
- H The ad is inaccurate because only 2.5% of the surveyed nutritionists eat Brand A tacos.
- J The ad is inaccurate because the survey should include people who are not nutritionists.

8.13B 11th Grade 2003

High School Math TEKS Focus
Objective Nine

- 49 The table below shows the cost of fertilizer, depending on the amount purchased.

Cost of Fertilizer

Number of Pounds	Cost
5	\$1.95
20	\$6.95
50	\$15.95
100	\$28.95

Which conclusion can be made based on information in the table?

- A The cost of 10 pounds of fertilizer would be more than \$4.00.
- B The cost of 200 pounds of fertilizer would be less than \$57.00.
- C The cost of fertilizer is always more than \$0.35 per pound.
- D The cost of fertilizer is always less than \$0.30 per pound.

8.13B 11th Grade 2004