

Name: _____

2003, Mathematics - Grade 10

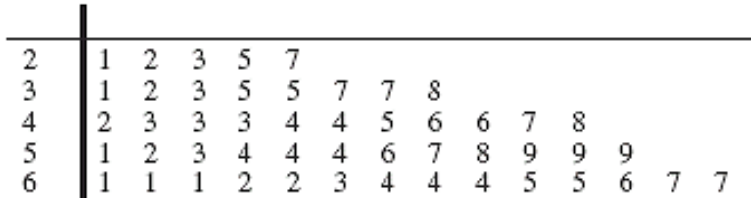
Question 32: Multiple Choice

Data Analysis, Statistics, and Probability



The stem-and-leaf plot below shows the ages of 50 teachers in the Bernard Township school system.

Ages of 50 Teachers in the Bernard Township School System



Key	
6	1 = 61

Based on the stem-and-leaf plot, what percent of the teachers are over 50 years of age?

- A. 26%
- B. 47%
- C. 51%
- D. 52%

2005, Mathematics - Grade 10

Question 37: Multiple Choice

Data Analysis, Statistics, and Probability



The chart below separates the number of students majoring in math/science from students pursuing other majors at a state college.

Students' Majors by Class

	Freshmen	Sophomores	Juniors	Seniors
Math/Science Majors	260	310	200	330
Other Majors	1390	1510	1450	1550

What percent of the math/science majors are seniors?

- A. 43%
- B. 30%
- C. 21%
- D. 5%

Name: _____

1998, Mathematics - Grade 10

Question 5: Multiple Choice

Number Sense and Operations



The number of Center High School students who donated money to the United Fund this year was 342. This figure is 110% of the number of students who donated last year. This means that

- A. ten more Center High students donated to the United Fund this year.
 - B. the number of Center High students donating to the United Fund decreased from last year to this year.
 - C. Center High School raised more money for the United Fund this year than it did last year.
 - D. the number of Center High School students donating to the United Fund increased from last year to this year.
-

1999, Mathematics - Grade 10

Question 22: Open Response

Number Sense and Operations



A company is hired to clean up an oil spill in a harbor. Each day 10% of the remaining oil can be cleaned from the surface of the water.

- a. What percent of the oil will remain after one clean-up day?
 - b. What percent of oil will remain after 3 clean-up days? Explain or show how you found your answer.
 - c. How many clean-up days will it take to remove at least 50% of the oil spill? Explain or show how you found your answer.
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1999, Mathematics - Grade 10

Question 24: Multiple Choice

Patterns, Relations, and Algebra



A bag contains 80 marbles that are either white, orange, or green. If 25% are green and there are four times as many white marbles as orange marbles, what percent are white?

- A. 12%
- B. 15%
- C. 48%
- D. 60%

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2000, Mathematics - Grade 10

Question 21: Open Response



Number Sense and Operations

An automobile is purchased for \$18,000. Its value decreases each year according to the following schedule:

- The car's value decreases by 30% in the first year.
- After the first year, its value decreases by 20% each year.

a. What is the value of this car at the end of one year? Explain or show how you found your answer.

b. During which year will the car's value decrease to less than half its original price? Explain or show how you found your answer.

c. Suppose the value of another car, which also costs \$18,000, decreases at the rate of 25% each year. Which car would have the greater value 3 years after it was purchased? Explain or show how you found your answer.

2000, Mathematics - Grade 10

Question 29: Multiple Choice



Number Sense and Operations

An article is on sale for 20% off its original price. What percent of increase is needed to return the sale item to its original price?

- A. 50%
- B. 25%
- C. 20%
- D. 75%

2000, Mathematics - Grade 10

Question 34: Multiple Choice



Patterns, Relations, and Algebra

In Jackson High School, 28% of all students play a musical instrument, and 75% of those students are in the marching band. What percent of all students in the school are in the marching band?

- A. 103%
- B. 21%
- C. 47%
- D. 3%

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2000, Mathematics - Grade 10

Question 34: Multiple Choice



Patterns, Relations, and Algebra

In Jackson High School, 28% of all students play a musical instrument, and 75% of those students are in the marching band. What percent of all students in the school are in the marching band?

- A. 103%
 - B. 21%
 - C. 47%
 - D. 3%
-

2005, Mathematics - Grade 10

Question 16: Short Answer



Number Sense and Operations

On an airline, approximately 10% of the airline passengers who are booked for a flight do not show up for the flight. The airline has booked 160 passengers for a flight with maximum seating of 135. How many of the 160 passengers booked for this flight will **not** have a seat, assuming 10% of the booked passengers do not show up?

2002, Mathematics - Grade 10

Question 38: Multiple Choice



Patterns, Relations, and Algebra

On January 1, 2000, a car had a value of \$15,000. Each year after that, the car's value will decrease by 20 percent of the previous year's value. Which expression represents the car's value on January 1, 2003?

- A. $15,000(0.8)^3$
- B. $15,000(0.8)^4$
- C. $15,000(0.2)^3$
- D. $15,000(0.2)^4$