

Name: _____

2004, Mathematics - Grade 10

Question 40: Multiple Choice



Number Sense and Operations

Bailey noticed that many of the students at her school had red hair. She randomly chose 25 of the students in her school and found that 2 of them had red hair. If Bailey's sample is representative, which of the following is closest to the number of the 2200 students at her school who have red hair?

- A. 44
 - B. 88
 - C. 176
 - D. 200
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2004, Mathematics - Grade 10

Question 34: Multiple Choice



Patterns, Relations, and Algebra

The force needed to stretch a spring is directly proportional to the amount the spring is to be stretched. If a force of 100 pounds stretches a certain spring 8 inches, how much force is needed to stretch the spring 12 inches?

- A. 25 pounds
 - B. 50 pounds
 - C. 100 pounds
 - D. 150 pounds
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2002, Mathematics - Grade 10

Question 20: Open Response



Number Sense and Operations

Theresa took a test that had a total of 50 questions. There were 20 open-response questions and 30 short-answer questions on the test.

- a. There was a total of 100 points on the test; each question on the test was worth the same number of points. How many points was each question worth? Show your work or explain how you obtained your answer.
- b. Suppose that 90% was the minimum score required in order to earn an A on this test. How many questions could Theresa answer incorrectly and still earn an A? Show your work or explain how you obtained your answer.
- c. If Theresa answered all of the short-answer questions correctly, what is the minimum percent of open-response questions that Theresa must answer correctly in order to receive a score of 90% on the test? Show your work or explain how you obtained your answer.

Name: _____

2001, Mathematics - Grade 10

Question 15: Short Answer

Patterns, Relations, and Algebra

At the first stop, $\frac{3}{4}$ of the passengers on the bus got off and 8 people got on.

A total of 16 passengers were left on the bus. Write an equation that can be solved to find how many passengers were on the bus before the first stop. Let x represent the number of passengers on the bus before the first stop. (You do **not** have to solve the equation.)



2000, Mathematics - Grade 10

Question 26: Multiple Choice

Patterns, Relations, and Algebra

Four hundred deer were captured in Milltown Forest, tagged, and released back into the forest. Several weeks later, a forest ranger captured a number of deer at a random location in Milltown Forest, recorded the number of tagged and nontagged deer, and released the deer back into the forest. She did this over two trials as shown below.

Record of Deer Captured in Milltown Forest

	Total of Deer	Tagged	Nontagged
Trial 1	65	10	55
Trial 2	75	15	60

Approximately how many deer could you expect to find in the entire forest?

- A. 2,600
- B. 1,600
- C. 2,300
- D. 1,000



2000, Mathematics - Grade 10

Question 9: Multiple Choice

Geometry

A movie projector positioned 28 feet from a wall creates an image that is 7 feet wide on the wall. If a screen is placed 5 feet in front of the projector, what will be the width of the image on the screen?

- A. less than 1 foot
- B. between 1 and 2 feet
- C. between 3 and 4 feet
- D. greater than 4 feet



Name: _____

1999, Mathematics - Grade 10

Question 14: Short Answer

Patterns, Relations, and Algebra

A survey showed that the distribution of blood types among people with a positive Rh factor is the following:

Type O	46%
Type A	39%
Type B	11%
Type AB	4%

If there are 750 students with a positive Rh factor in Martin High School, how many of these students would you expect to have Type O blood?



1998, Mathematics - Grade 10

Question 35: Short Answer

Number Sense and Operations

The minimum wage increased from \$5.25 to \$5.75 per hour.

- What is the rate of increase of the minimum wage?
- Kevin was earning \$6.35 per hour at the time of the minimum wage increase. His employer raised his salary to \$7.10 per hour. Did his boss give him an increase comparable to the rate of increase given to the minimum wage earners? Explain your reasoning.
- Allana, who also works for the same employer, was promised a raise. If she is making \$7.40 per hour, what new hourly wage would reflect an increase comparable to that received by the minimum wage earners? Show how you arrived at her new hourly wage.



1998, Mathematics - Grade 10

Question 11: Multiple Choice

Patterns, Relations, and Algebra

A test on a sample of 492 in-line skate wheels identified 3 defective wheels. Based on this rate of defects, **approximately** how many defective wheels will be found per 10,000 wheels?

- 20
- 60
- 100
- 300

