

Name: _____

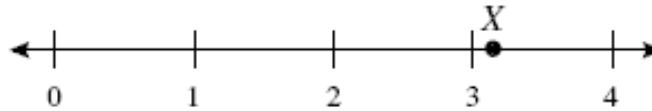
2005, Mathematics - Grade 10

Question 12: Multiple Choice

Number Sense and Operations



Point X is graphed on the number line as shown below.



Which of the following numbers is closest to the location of point X ?

- A. $\sqrt{6}$
- B. $\sqrt{8}$
- C. $\sqrt{11}$
- D. $\sqrt{13}$

Name: _____

2005, Mathematics - Grade 10

Question 8: Multiple Choice

Number Sense and Operations



Which of the following is closest to $\frac{2^5 \cdot 5^3}{33}$?

- A. 5
 - B. 12
 - C. 120
 - D. 1200
-

2005, Mathematics - Grade 10

Question 6: Multiple Choice

Number Sense and Operations



The Golden Ratio is defined by the expression shown below.

$$\frac{1 + \sqrt{5}}{2}$$

Which of the following is closest to the value of the ratio?

- A. 1.1
 - B. 1.6
 - C. 2.1
 - D. 2.9
-

2005, Mathematics - Grade 10

Question 11: Multiple Choice

Number Sense and Operations



At a fish market, Mr. Estes bought several pounds of cod that was on sale for \$3.59 per pound. The total cost of the cod that he bought was \$28.63.

Which of the following is closest to the amount of cod that Mr. Estes bought?

- A. 6 pounds
- B. 7 pounds
- C. 8 pounds
- D. 9 pounds

Name: _____

2004, Mathematics - Grade 10

Question 14: Multiple Choice

Number Sense and Operations



Which of the following is closest to $\sqrt{53}$?

- A. 6.7
 - B. 7.3
 - C. 7.7
 - D. 8.3
-

2004, Mathematics - Grade 10

Question 9: Multiple Choice

Number Sense and Operations



The Sun is approximately 93,000,000 miles from Earth. Light travels approximately 186,000 miles per second.

$$\left(\text{time} = \frac{\text{distance}}{\text{speed}} \right)$$

Which of the following is **closest** to the number of seconds it takes light to travel from the Sun to Earth?

- A. 0.005 second
 - B. 0.050 second
 - C. 500 seconds
 - D. 5000 seconds
-

2004, Mathematics - Grade 10

Question 8: Multiple Choice

Number Sense and Operations



A certain car averages 28 miles per gallon. Gasoline costs \$1.11 per gallon. Which of the following is closest to the number of miles the car would be expected to go on \$250 worth of gasoline?

- A. 400 miles
- B. 6,000 miles
- C. 12,000 miles
- D. 30,000 miles

Name: _____

2003, Mathematics - Grade 10

Question 22: Multiple Choice



Number Sense and Operations

Water is flowing from a 1.5-inch nozzle with water pressure of 65 pounds per square inch. The rate (in gallons per minute) at which the water flows from this nozzle is represented by the expression $29.7 \times (1.5)^2 \sqrt{65}$. What is the approximate rate at which the water flows?

- A. 239 gallons per minute
- B. 293 gallons per minute
- C. 359 gallons per minute
- D. 539 gallons per minute

2003, Mathematics - Grade 10

Question 14: Multiple Choice



Number Sense and Operations

Which of the following is closest to the value of $\frac{7 - \sqrt{2}}{2}$?

- A. 1.1
- B. 2.8
- C. 6.0
- D. 6.3

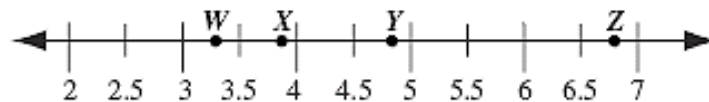
2003, Mathematics - Grade 10

Question 8: Multiple Choice



Number Sense and Operations

Which point most closely indicates the location of $\sqrt[3]{60}$ on the number line below?



- A. W
- B. X
- C. Y
- D. Z

Name: _____

2003, Mathematics - Grade 10

Question 6: Multiple Choice

Patterns, Relations, and Algebra

Each of the following statements is true.

$$16^x = 4$$

$$9^x = 3$$

$$4^x = 2$$

What is the value of 3^x ?

- A. 1
- B. $\sqrt{2}$
- C. $\sqrt{3}$
- D. 9



2003, Mathematics - Grade 10

Question 5: Multiple Choice

Number Sense and Operations

What is the simplified form of the expression $\sqrt{450}$?

- A. $15\sqrt{2}$
- B. $45\sqrt{2}$
- C. $75\sqrt{2}$
- D. $225\sqrt{2}$



2003, Mathematics - Grade 10

Question 2: Multiple Choice

Number Sense and Operations

Alison's car gets about 32 miles per gallon of gas. If gas prices range from \$1.80 to \$2.10 a gallon, which of the following is closest to the amount of money Alison will spend on gas for a 1200-mile road trip this summer?

- A. \$40
- B. \$55
- C. \$75
- D. \$240



Name: _____

2002, Mathematics - Grade 10

Question 31: Open Response

Patterns, Relations, and Algebra



When a diver goes underwater, the weight of the water exerts pressure on the diver. The table below shows how the water pressure on the diver increases as the diver's depth increases.

Water Pressure on a Diver	
Diver's Depth (in feet)	Water Pressure (in pounds per square inch)
10	4.4
20	8.8
30	13.2
40	17.6
50	22.0

- Based on the table above, what will be the water pressure on a diver at a depth of 60 feet? Show your work or explain how you obtained your answer.
- Based on the table above, what will be the water pressure on a diver at a depth of 100 feet? Show your work or explain how you obtained your answer.
- Write an equation that describes the relationship between the depth, D , and the pressure, P , based on the pattern shown in the table.
- Use your equation from part c to determine the depth of the diver, assuming the water pressure on the diver is 46.2 pounds per square inch. Show your work or explain how you obtained your answer.

Name: _____

2002, Mathematics - Grade 10

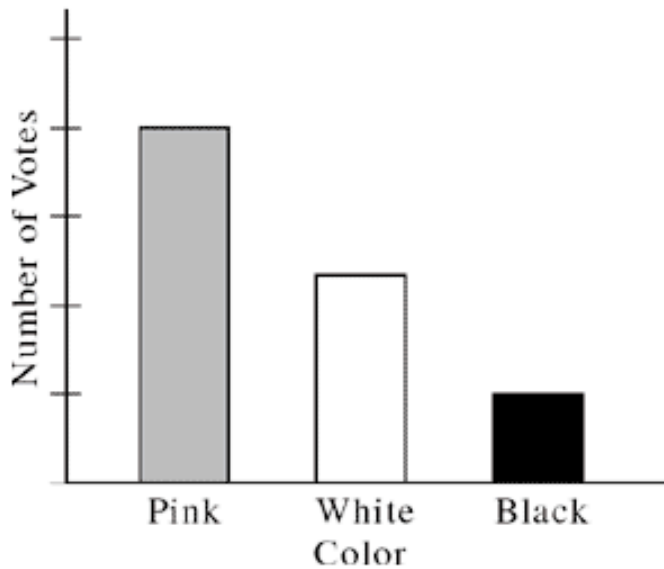
Question 26: Multiple Choice

Number Sense and Operations



A company that makes ballet shoes surveyed 200 customers. Each customer voted for one favorite color of ballet shoe. The bar graph shows the results.

**Ballet Shoe Color Preferences
(200 Total Votes)**



Based on the data in the graph, which of the following is the **best** estimate of the number of customers who voted for "Pink"?

- A. 80
- B. 110
- C. 140
- D. 170

2002, Mathematics - Grade 10

Question 2: Multiple Choice

Number Sense and Operations



Darlene went to the hardware store to purchase 581 feet of rope. The rope costs \$0.61 per yard. Which is **closest** to the amount of money Darlene needs to purchase the rope?

- A. \$100.00
- B. \$120.00
- C. \$360.00
- D. \$1080.00

Name: _____

2001, Mathematics - Grade 10

Question 23: Multiple Choice

Geometry

Use the map below to answer question 23.



Mr. Hendricks operates a snowplow for the Department of Public Works (D.P.W.). He found that he can

- begin snowplowing at the D.P.W.
- plow every street shown on the map above without going over any street more than once, and
- end at his home.

Where is his home located?

- A. at A
- B. at B
- C. at C
- D. at D

2001, Mathematics - Grade 10

Question 6: Multiple Choice

Number Sense and Operations

$2\sqrt{5}$ is between

- A. 2 and 3.
- B. 4 and 6.
- C. 6 and 9.
- D. 9 and 12.



2001, Mathematics - Grade 10

Question 1: Multiple Choice

Number Sense and Operations

The value of $\frac{51.92 \times 202}{4.93}$ is closest to

- A. 20.
- B. 200.
- C. 2,000.
- D. 20,000.



Name: _____

1998, Mathematics - Grade 10

Question 32: Short Answer

Number Sense and Operations



Automobile Stopping Distance								
Speed (mph)	10	20	30	40	50	60	70	80
Stopping Distance (feet)	15	40	75	120	175	240	315	

A driver training class collected the above information. Estimate the stopping distance if a car is traveling at 75 mph.

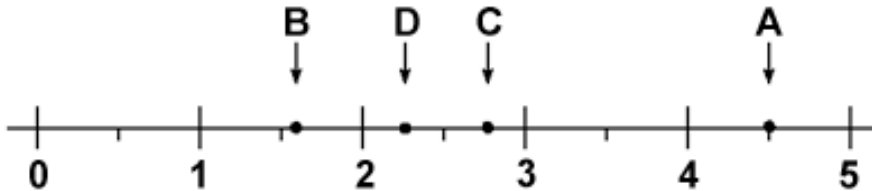
1998, Mathematics - Grade 10

Question 7: Multiple Choice

Number Sense and Operations



Which of the points on the number line below would be the **best** approximation of the point that is halfway between $\sqrt{2}$ and π ?



- A. A
- B. B
- C. C
- D. D