

Name: _____

2005, Mathematics - Grade 10

Question 7: Multiple Choice

Number Sense and Operations



In which equation below is the solution equal to the multiplicative inverse of $\frac{2}{3}$?

- A. $\frac{2}{3} \cdot r = 1$
 - B. $\frac{2}{3} \cdot r = \frac{2}{3}$
 - C. $\frac{2}{3} \cdot r = 0$
 - D. $\frac{2}{3} \cdot r = -1$
-

1999, Mathematics - Grade 10

Question 25: Multiple Choice

Patterns, Relations, and Algebra

Suppose there is a mathematical formula known as Peg's Theorem.

In Peg's Theorem, $P = \frac{E}{G}$ for $G \neq 0$.

If E remains fixed and G decreases by 50%, then P becomes

- A. twice as large.
 - B. half as large.
 - C. the same.
 - D. four times as large.
-

1998, Mathematics - Grade 10

Question 2: Multiple Choice

Number Sense and Operations

$(a + b)(c + d)$ is the same as

- A. $a + b(c + d)$
- B. $ac + bd$
- C. $(a + b)c + d$
- D. $(a + b)c + (a + b)d$

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2001, Mathematics - Grade 10

Question 5: Multiple Choice

Number Sense and Operations

Let a , x , and y represent real numbers with $a > 0$ and $x > y$. Which of the following statements is **not** true?

- A. $ax > ay$
- B. $ay > ax$
- C. $x + a > y + a$
- D. $x - a > y - a$



2001, Mathematics - Grade 10

Question 10: Multiple Choice

Number Sense and Operations

Which of the following is **always** true?


- A. The product of any two integers is an integer.
- B. The quotient of any two integers is an integer.
- C. The product of any two irrational numbers is irrational.
- D. The quotient of any two irrational numbers is irrational.





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Question 18: Multiple Choice

Number Sense and Operations

The identity element for the operation of addition is 0 since $0 + x = x$ and $x + 0 = x$ for any real number x . The operation  is defined by the following table.

	a	b	c	d
a	d	c	b	a
b	c	d	a	b
c	b	a	d	c
d	a	b	c	d

What is the identity element for the operation  ?

- A. a
- B. b
- C. c
- D. d

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Question 24: Multiple Choice

Number Sense and Operations



Which of the following shows an application of the distributive property?

- A. $(6xy + 4xy) + 2xz = 6xy + (4xz + 2xz)$
- B. $2xy + 3xz + 5xy = 2xy + 5xy + 3xz$
- C. $4xy - 12xz = 4x(y - 3z)$
- D. $-5xy + 5xy + 3xz = 3xz$

2003, Mathematics - Grade 10

Question 15: Short Answer

Number Sense and Operations



What is the solution to the equation $\sqrt{x} = 16$?

2003, Mathematics - Grade 10

Question 24: Multiple Choice

Number Sense and Operations



Which of the following equations is **false** for all positive values of n ?

- A. $n^2 = n(n)$
- B. $n^2 = n(-n)$
- C. $n^2 = -n(-n)$
- D. $n^2 = \sqrt{n^4}$

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Question 17: Open Response

Number Sense and Operations



Each of the statements below is true for particular values of real numbers p , t , v , and z .

$$v \cdot p = v \text{ and } v \neq 0$$

$$8 \cdot z = p$$

$$v + 5 = t$$

$$t + p = p$$

- What is the numerical value of p ? Write the equation or equations you used to find its numerical value and explain your reasoning.
- What is the numerical value of t ? Write the equation or equations you used to find its numerical value and explain your reasoning.
- What is the numerical value of v ? Write the equation or equations you used to find its numerical value and explain your reasoning.
- What is the numerical value of z ? Write the equation or equations you used to find its numerical value and explain your reasoning.

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Question 23: Multiple Choice

Number Sense and Operations



Ralph simplified the expression

$$15\left(\frac{1}{3} + \frac{2}{5}\right)$$

to

$$(5 + 6).$$

Which of the following properties of the real numbers did Ralph use?

- associative property of multiplication
- commutative property of multiplication
- distributive property
- multiplicative identity property