

Integer Operations Worksheet Questions and Answers PDF

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Part 1: Building a Foundation

What is the definition of an integer?

Hint: Think about the types of numbers.

- A) A fraction
- B) A whole number that can be positive, negative, or zero ✓
- C) A decimal number
- D) A positive number only

■ An integer is a whole number that can be positive, negative, or zero.

Which of the following are examples of integers? (Select all that apply)

Hint: Consider whole numbers, both positive and negative.

- A) -5 ✓
- B) 0 ✓
- C) 3.14
- D) 7 ✓

■ Examples of integers include -5, 0, and 7.

Explain the rule for adding two integers with different signs.

Hint: Think about how you combine positive and negative values.

When adding integers with different signs, subtract the smaller absolute value from the larger absolute value and take the sign of the integer with the larger absolute value.

List the steps in the order of operations using the acronym PEMDAS/BODMAS.

Hint: Remember the order in which operations should be performed.

1. What does P stand for?

Parentheses

2. What does E stand for?

Exponents

3. What does MD stand for?

Multiplication and **D**ivision

4. What does AS stand for?

Addition and **S**ubtraction

The order of operations is Parentheses, Exponents, Multiplication and Division (from left to right), Addition and Subtraction (from left to right).

Part 2: Comprehension and Application

When subtractING integers, what is the equivalent operation?

Hint: Think about how subtraction can be represented.

- A) Multiplying by zero
- B) Adding the opposite ✓
- C) Dividing by two
- D) SubtractING the same number

SubtractING integers is equivalent to adding the opposite.

Which properties apply to the addition of integers? (Select all that apply)

Hint: Consider the different properties of addition.

- A) Commutative Property ✓
- B) Associative Property ✓
- C) Distributive Property
- D) Identity Property ✓

The properties that apply to the addition of integers include Commutative Property, Associative Property, and Identity Property.

Describe how a number line can be used to add the integers -3 and 5.

Hint: Think about the movement on the number line.

To add -3 and 5 on a number line, start at -3 and move 5 units to the right, landing on 2.

What is the result of the operation $(-7) + 4$?

Hint: Consider the signs of the numbers involved.

- A) -11
 B) -3 ✓
 C) 3
 D) 11

The result of $(-7) + 4$ is -3.

Which of the following expressions correctly apply the distributive property? (Select all that apply)

Hint: Think about how to distribute multiplication over addition.

- A) $3(4 + 5) = 3 \cdot 4 + 3 \cdot 5$ ✓
 B) $2(6 - 3) = 2 \cdot 6 - 2 \cdot 3$
 C) $5 + (2 \cdot 3) = 5 \cdot 2 + 5 \cdot 3$
 D) $4(3 + 2) = 4 \cdot 3 + 4 \cdot 2$ ✓

The expressions that correctly apply the distributive property are $3(4 + 5) = 3 \cdot 4 + 3 \cdot 5$ and $4(3 + 2) = 4 \cdot 3 + 4 \cdot 2$.

Solve the expression $2(3 - 5) + 4$ using the order of operations and explain each step.

Hint: Break down the expression step by step.

To solve $2(3 - 5) + 4$, first calculate $(3 - 5) = -2$, then multiply $2 \cdot -2 = -4$, and finally add $-4 + 4 = 0$.

Part 3: Analysis, Evaluation, and Creation

If a number is multiplied by -1, what is the effect on the number?

Hint: Consider how multiplication affects the sign of a number.

- A) It becomes zero
- B) It becomes positive
- C) It becomes negative
- D) It changes sign ✓

■ Multiplying a number by -1 changes its sign.

Analyze the following operations and determine which are correct. (Select all that apply)

Hint: Evaluate each operation carefully.

- A) $(-3) * (-2) = 6$ ✓
- B) $4 \div (-2) = -2$ ✓
- C) $(-5) + (-5) = -10$ ✓
- D) $7 - (-3) = 4$

■ The correct operations are $(-3) * (-2) = 6$, $4 \div (-2) = -2$, and $(-5) + (-5) = -10$.

Break down the expression $(-2) * (3 + 4)$ and explain the steps to solve it using the distributive property.

Hint: Think about how to distribute the multiplication.

■ To solve $(-2) * (3 + 4)$, distribute -2 to both 3 and 4: $(-2)*3 + (-2)*4 = -6 + -8 = -14$.

Which statement best evaluates the expression $5 - (2 + 3)$?

Hint: Consider the order of operations.

- A) The result is positive
- B) The result is zero

- C) The result is negative ✓
- D) The result is undefined

■ The result of $5 - (2 + 3)$ is negative.

Evaluate the following scenarios and determine which involve integer operations. (Select all that apply)

Hint: Think about the context of each scenario.

- A) Calculating the balance after a withdrawal from a bank account ✓
- B) Measuring the temperature change from morning to afternoon ✓
- C) Finding the average of a set of decimal numbers
- D) Determining the distance traveled by a car ✓

■ The scenarios that involve integer operations are calculating the balance after a withdrawal from a bank account, measuring the temperature change from morning to afternoon, and determining the distance traveled by a car.

Create a real-world problem involving the addition and subtraction of integers, and solve it. Provide a detailed explanation of your solution process.

Hint: Think about a scenario that requires both operations.

■ An example problem could involve tracking expenses and income, where you add income and subtract expenses to find the net amount.