Adding And Subtracting Positive And Negative Numbers Worksheet Questions and Answers PDF

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Part 1: Building a Foundation

What is the result of adding two positive integers?

Hint: Consider the properties of positive numbers.

- ◯ Negative
- ◯ Zero
- ◯ **Positive ✓**
- ◯ Undefined

> The result of adding two positive integers is always positive.

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

Hint: Remember that integers include whole numbers and their negatives.

- ☐ **-3 ✓**
- ☐ 0.5
- ☐ **7 ✓**
- ☐ **0 ✓**

> Integers include whole numbers, both positive and negative, as well as zero.

Explain why subtractING a negative number is equivalent to adding a positive number.

Hint: Think about the rules of integer operations.

SubtractING a negative number effectively moves you to the right on the number line, which is the same as adding a positive number.

List the rules for adding the following:

Hint: Consider the signs of the numbers involved.

1. A positive and a negative number

Subtract the smaller absolute value from the larger absolute value and take the sign of the larger.

2. Two negative numbers

Add their absolute values and the result is negative.

The rules vary based on the signs of the integers being added.

Part 2: Understanding Integer Operations

If you start at -5 on a number line and move 3 units to the right, where do you end up?

Hint: Think about how moving right affects the value.

- ◯ -8
- ◯ **-2 ✓**
- ◯ 2

◯ 8

Moving 3 units to the right from -5 results in -2.

Which of the following statements are true about integer operations? (Select all that apply)

Hint: Evaluate each statement based on your knowledge of integers.

☐ Adding two negative numbers always results in a positive number.
☐ **SubtractING a positive number from a negative number results in a more negative number. ✓**
☐ **The sum of a number and its opposite is zero. ✓**
☐ **SubtractING zero from a number does not change the number. ✓**

Some statements are true while others are false based on the properties of integers.

Describe how the number line can be used to visualize the subtraction of integers.

Hint: Consider how movement on the number line represents addition and subtraction.

The number line helps visualize subtraction by showing movement to the left for negative values.

Part 3: Applying Integer Operations to Real-World Scenarios

A submarine is at a depth of 200 meters below sea level. If it ascends 50 meters, what is its new depth?

Hint: Consider how ascending affects the depth value.

◯ **150 meters below sea level ✓**
◯ 250 meters below sea level
◯ 50 meters below sea level
◯ 0 meters (sea level)

The new depth is 150 meters below sea level after ascending.

Which of the following scenarios involve adding a negative number? (Select all that apply)

Hint: Think about how each scenario affects the total.

- [x] **A temperature drops by 5 degrees. ✓**
- [ ] A bank account balance increases by $100.
- [x] **A hiker descends 300 feet. ✓**
- [ ] A car accelerates from 0 to 60 mph.

Adding a negative number decreases the total in each applicable scenario.

Calculate the final balance if a bank account starts with $200, then $50 is withdrawn, and later $30 is deposited.

Hint: Consider the sequence of transactions carefully.

The final balance is $180 after the transactions.

Part 4: Analyzing Relationships in Integer Operations

Which operation is equivalent to subtractING -8 from 5?

Hint: Think about how subtractING a negative works.

- ◯ **5 + 8 ✓**
- ◯ 5 - 8
- ◯ -5 + 8
- ◯ -5 - 8

SubtractING -8 from 5 is equivalent to adding 8 to 5.

Analyze the following statements and identify which are correct regarding integer subtraction. (Select all that apply)

Hint: Evaluate each statement based on your understanding of subtraction.

- [ ] **SubtractING a larger positive number from a smaller positive number results in a negative number.** ✓
- [ ] **SubtractING a negative number is the same as adding its positive counterpart.** ✓
- [ ] SubtractING zero changes the value of the original number.
- [ ] **SubtractING a positive number from a negative number results in a more negative number.** ✓

> Some statements are true while others are false based on the properties of integer subtraction.

Explain how the rules of adding and subtractING integers can be used to solve the equation: -3 + x = 2.

Hint: Consider how to isolate the variable.

> **To solve for x, you would add 3 to both sides of the equation.**

Part 5: Synthesis and Reflection

Which of the following expressions results in the largest value?

Hint: Evaluate each expression carefully.

- ◯ -10 + 5
- ◯ -10 - 5
- ◯ 10 - 5
- ◯ **10 + 5** ✓

> The expression 10 + 5 results in the largest value.

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

Hint: Consider the accuracy of each scenario.

- [x] **A debt of $20 is reduced by a payment of $5, resulting in a debt of $15.** ✓
- [x] **A temperature of -10°C increases by 15°C, resulting in a temperature of 5°C.** ✓
- [x] **A car reverses 10 meters and then moves forward 15 meters, ending up 5 meters from the starting point.** ✓
- [ ] A savings account has $100, and $50 is withdrawn, leaving $150.

> Some scenarios correctly apply integer operations while others do not.

Create a real-world problem involving the addition and subtraction of integers, and provide a solution to your problem.

Hint: Think about a scenario that includes both positive and negative values.

> **The problem should involve a situation where integers are added and subtracted, with a clear solution.**

Propose two different strategies to solve the equation: x - (-4) = 7. Describe each strategy briefly.

Hint: Consider how to manipulate the equation to isolate x.

1. First strategy

> Add 4 to both sides: x = 7 + 4.

2. Second strategy

Recognize that x = 7 + 4 since subtractING -4 is the same as adding 4.

One strategy is to add 4 to both sides, while another is to recognize that subtractING a negative is the same as adding.