

subtracting integers worksheet with answers

Subtracting integers worksheet with answers is an essential educational tool designed for students to practice and master the concept of integer subtraction. Understanding how to subtract integers is crucial in mathematics, as it lays the foundation for more advanced topics such as algebra and calculus. This article will explore the concept of subtracting integers, provide a detailed worksheet with various problems, and offer answers and explanations for each question.

Understanding Integers

Before diving into the subtraction process, it's important to have a solid understanding of what integers are.

What are Integers?

- Integers are whole numbers that can be either positive, negative, or zero.
- They are represented as follows:
- Positive integers: 1, 2, 3, 4, ...
- Negative integers: -1, -2, -3, -4, ...
- Zero: 0

Integers do not include fractions or decimals. The set of integers is often denoted by the symbol $\mathbb{Z}$.

Importance of Subtracting Integers

Subtracting integers is important for various reasons:

1. Real-world applications: Understanding how to subtract integers helps in daily life situations, such as calculating temperature changes, managing finances, and analyzing data.
2. Foundation for higher math: Subtracting integers is a fundamental skill needed for more complex mathematical concepts.
3. Critical thinking: Learning to subtract integers encourages problem-solving and critical thinking skills.

Rules for Subtracting Integers

To effectively subtract integers, it's helpful to know a few rules:

1. Subtracting a Positive Integer: When you subtract a positive integer, you move to the left on the number line.
 - Example: $(5 - 3 = 2)$
2. Subtracting a Negative Integer: When you subtract a negative integer, it

is the same as adding its positive counterpart.

- Example: $(5 - (-3) = 5 + 3 = 8)$

3. Subtracting Zero: Subtracting zero from any integer does not change the value of that integer.

- Example: $(5 - 0 = 5)$

4. Negative Result: If you subtract a larger integer from a smaller integer, the result will be negative.

- Example: $(3 - 5 = -2)$

Subtracting Integers Worksheet

Below is a worksheet designed to help students practice subtracting integers. Each question focuses on different scenarios and levels of difficulty.

Worksheet Problems

1. Calculate the following:

- a) $(7 - 4 = ?)$

- b) $(3 - 8 = ?)$

- c) $(-5 - 6 = ?)$

- d) $(-3 - (-2) = ?)$

- e) $(0 - 9 = ?)$

2. Solve the following integer subtraction problems:

- a) $(10 - (-5) = ?)$

- b) $(-12 - 3 = ?)$

- c) $(4 - (-7) = ?)$

- d) $(-8 - 0 = ?)$

- e) $(-1 - (-1) = ?)$

3. Word problems involving integer subtraction:

- a) A temperature dropped from 3°C to -5°C . What is the change in temperature?

- b) A bank account has a balance of \$50. After a withdrawal of \$70, what is the new balance?

Answers to the Worksheet

Now that students have had the opportunity to work through the worksheet, here are the answers along with explanations for each problem.

Answers to Section 1

1. a) $(7 - 4 = 3)$

- Explanation: Moving 4 units to the left from 7 on the number line gives us 3.

b) $(3 - 8 = -5)$

- Explanation: Moving 8 units to the left from 3 results in -5.

c) $(-5 - 6 = -11)$

- Explanation: Moving 6 units left from -5 leads to -11.

d) $(-3 - (-2) = -1)$

- Explanation: Subtracting -2 is the same as adding 2, so $(-3 + 2 = -1)$.

e) $(0 - 9 = -9)$

- Explanation: Moving 9 units left from 0 gives us -9.

Answers to Section 2

2. a) $(10 - (-5) = 15)$

- Explanation: Subtracting -5 is the same as adding 5, so $(10 + 5 = 15)$.

b) $(-12 - 3 = -15)$

- Explanation: Moving left 3 units from -12 results in -15.

c) $(4 - (-7) = 11)$

- Explanation: Subtracting -7 is the same as adding 7, so $(4 + 7 = 11)$.

d) $(-8 - 0 = -8)$

- Explanation: Subtracting 0 does not change the value.

e) $(-1 - (-1) = 0)$

- Explanation: Subtracting -1 is the same as adding 1, so $(-1 + 1 = 0)$.

Answers to Section 3

3. a) The temperature change is $(3 - (-5) = 3 + 5 = 8)^{\circ}\text{C}$.

- Explanation: The temperature dropped by 8°C .

b) The new balance after a withdrawal of \$70 is $(50 - 70 = -20)$.

- Explanation: The account shows a negative balance of -\$20, indicating an overdraft.

Conclusion

The subtracting integers worksheet with answers serves as a valuable resource for students seeking to improve their skills in integer subtraction. By engaging with the provided problems and reviewing the answers, learners can deepen their understanding of integers and develop confidence in their mathematical abilities. Mastering this fundamental concept is essential for success in more advanced areas of mathematics, emphasizing the importance of practicing subtraction with integers.

Frequently Asked Questions

What is the result of subtracting -5 from 3?

The result is 8, because $3 - (-5) = 3 + 5 = 8$.

How do you subtract two negative integers, for example, $-7 - (-3)$?

When subtracting two negative integers, you can add the absolute values. So, $-7 - (-3) = -7 + 3 = -4$.

If you have the expression $4 - 6$, what is the answer?

The answer is -2, because $4 - 6 = -2$.

What is the difference between subtracting a larger negative integer from a smaller one, such as $-2 - (-5)$?

The answer is 3, because $-2 - (-5) = -2 + 5 = 3$.

How can you check your answer when subtracting integers?

You can check your answer by adding the opposite of the number you subtracted. For example, if you calculated $5 - 3 = 2$, check by doing $2 + 3 = 5$.

What is the outcome of subtracting 0 from an integer, e.g., $7 - 0$?

The outcome is the integer itself. So, $7 - 0 = 7$.

When subtracting integers, how do you handle the signs? For instance, what is $-3 - 4$?

When subtracting with different signs, you subtract the absolute values and keep the sign of the larger absolute value. So, $-3 - 4 = -7$.

What happens when you subtract a negative integer from a positive integer, like $8 - (-2)$?

When you subtract a negative integer, it is the same as adding its positive counterpart. Thus, $8 - (-2) = 8 + 2 = 10$.

Can you explain how to fill out a subtracting integers worksheet?

To fill out a subtracting integers worksheet, read each problem carefully, apply the rules of integer subtraction (considering signs), and write down the answers in the provided space.

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