Welcome, Maths Hero!

Your mission today is to conquer the world of subtracting negative numbers. Get ready to discover the surprising power of "double negatives"—sometimes, subtracting a negative actually means adding!

Task 1: Quick Subtractions!

Solve these subtraction problems involving negative numbers:

1. 5 - (-3) = __________
2. -7 - (-4) = __________
3. 10 - (-6) = __________
4. -12 - (-9) = __________
5. -3 - (-5) = __________

Super Tip! Subtracting a negative number is the same as adding the positive version of that number. Two negatives make a positive!

Task 2: Fill in the Missing Number

Find the missing number that makes the equation true:

1. 4 - ______ = 10
2. -5 - ______ = -1
3. 9 - ______ = 15
4. -8 - ______ = -2
5. 7 - ______ = 12

Task 3: True or False?

Decide whether the following statements are true or false:

1. 3 - (-3) = 6 → _____
2. -4 - (-4) = 0 → _____
3. 5 - (-2) = 3 → _____
4. -6 - (-1) = -5 → _____
5. 0 - (-7) = 7 → _____

MEGA INQUIRY CHALENGE

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The Treasure Map Mystery

Scenario:

You are an adventurer following an ancient treasure map. The map gives clues based on changes in elevation as you travel across different terrains. You must subtract negative numbers to find your exact location.

Here are the elevation changes (in meters) during your journey:

- Start at 100 meters above sea level
- Descend by -20 meters (yes, that means going up)
- Descend by -15 meters
- Climb by 30 meters
- Descend by -25 meters
- Climb by 10 meters

Your Task:

1. Calculate the elevation after each change.
2. What is your final elevation after all the changes?
3. At what point were you at the highest elevation? Explain your reasoning.
4. If you were required to turn back if your elevation dropped below 50 meters, did you need to turn back during your journey? Justify your answer.

Discussion Prompt:
How does subtracting negative numbers help in understanding elevation changes? Why is it important to recognize when a "double negative" actually means going higher in this adventure?

ANSWERS

Answers

Task 1: Quick Subtractions!

1. **5 - (-3) = 8**
2. **-7 - (-4) = -3**
3. **10 - (-6) = 16**
4. **-12 - (-9) = -3**
5. **-3 - (-5) = 2**

Task 2: Fill in the Missing Number

1. **4 - (-6) = 10**
2. **-5 - (-4) = -1**
3. **9 - (-6) = 15**
4. **-8 - (-6) = -2**
5. **7 - (-5) = 12**

Task 3: True or False?

1. **3 - (-3) = 6 → True**
2. **-4 - (-4) = 0 → True**
3. **5 - (-2) = 3 → False (It should be 7)**
4. **-6 - (-1) = -5 → True**
5. **0 - (-7) = 7 → True**

Problem-Solving Challenge: The Treasure Map Mystery

1. Elevations after each change:
   - Start: 100 meters
   - After descending by -20 meters: 120 meters
   - After descending by -15 meters: 135 meters
   - After climbing 30 meters: 165 meters
   - After descending by -25 meters: 190 meters
   - After climbing 10 meters: 200 meters
2. Final elevation: 200 meters
3. Highest elevation: 200 meters, reached at the end of the journey.
4. No, you did not need to turn back since your elevation never dropped below 50 meters.

Discussion Answer:

Subtracting negative numbers can represent real-world situations where what seems like a decrease can actually be an increase. Recognizing this pattern can help in various scenarios, like understanding elevation changes or managing financial losses that turn into gains.