



Do Algebraic Reasoning and Critical Thinking Have Strong Connections? Yes!

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NCTM Annual Conference 2012

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Earth Day

To celebrate Earth Day, a local elementary school sponsored an outdoor workday. Volunteers had three choices: pull weeds, plant flowers, or build benches for the outdoor classroom. Every volunteer participated in at least one activity. Use the clues to determine the total number of volunteers.

- * Fifty-six of the volunteers helped to plant flowers.
- * Sixty volunteers did not work on benches.
- * The four people who participated in all three activities were there all day!
- * Fifteen people only pulled weeds, and twenty people only planted flowers.
- * Everyone who helped build benches also did something else.
- * Three people built benches and pulled weeds but did not plant flowers.

How many volunteers helped with the Earth Day celebration? _____

Used with Permission

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Touring Monhegan Island

Monhegan Island is a beautiful place! One summer afternoon, all tourists were asked what they had done from 2:00 - 3:00 P.M. that day. Since the question was from several children completing a project, everyone was happy to answer the question, and everyone who had been on the island at that time was there to participate in the survey. The three most popular answers were hiking, relaxing at Black Head, and visiting art galleries. Use the clues to determine how many people were visiting the island.

- * Twenty-six people visited art galleries, and twenty-six people spent time hiking.
- * No one had stayed at Black Head point more than forty-five minutes, and hiking is the only way to get to Black Head!
- * Only two people were able to do all three during that specific hour; they left the art galleries at 2:10 and reached Black Head before 3:00 PM!
- * Only one person didn't do any of the three activities; he sat on the porch in a rocking chair reading a good book.
- * Fourteen people hiked to Blackhead but did not visit art galleries during the hour.
- * The number of people who spent the entire hour visiting galleries was seven times the number of people who spent the hour hiking and visiting galleries but did not go to Black Head.

How many tourists were visiting the island at that time? _____

What was the ratio of the number of people who relaxed at Blackhead to the number of tourists? _____

Three sixteenths of those surveyed planned to stay on the island all summer. How many tourists planned to stay on the island all summer? _____