

NAME: _____

UNIT 1 • RELATIONSHIPS BETWEEN QUANTITIES

Lesson 2: Creating Equations and Inequalities in One Variable

Problem-Based Task 1.2.1: Rafting and Hiking Trip

To celebrate graduation, you and 4 of your closest friends have decided to take a 5-day white-water rafting and hiking trip. During your 5-day trip, 2 days are spent rafting. If the rafting trip covers a distance of 60 miles and you are expected to raft 8 hours each day, how many miles must you raft each hour?

For the hiking portion of your trip, you and your friends carry the same amount of equipment, which works out to 35 pounds of equipment each. For extra money, you can hire an assistant, who will carry 50 pounds of equipment. Each assistant charges a flat fee of \$50 and an additional \$22 for each mile. The total amount you would have to pay the assistant is \$512. How many miles will your group be hiking? Is it worth hiring two assistants to help you and your friends carry the equipment? Justify your answers.

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Coaching

- a. If the rafting trip covers a distance of 60 miles and you are expected to raft 8 hours each day, how many miles must you raft each hour?

What is the ratio of miles to days?

What is the ratio you are looking for?

What is the ratio of days to hours?

How do you convert the original ratio of miles to days into miles per hour?

- b. How many miles will your group be hiking?

What is the equation of the cost of hiring an assistant?

What is the solution to this equation?

- c. Is it worth hiring two assistants to help you and your friends carry the equipment?

How much weight will each of you carry without assistants?

How much weight will each of you carry with two assistants?

What is the difference in the cost per day?

Are you willing to pay more money to have someone carry your equipment?