Rational Word Problems
Average Cost, Work

Name_____

1. Stan can load his truck in 24 minutes. If Chris helps him, it takes 15 minutes to load the truck. How long does it take Chris alone?

a) Set up equation. (Stan + Chris = Together)

b) Solve for the variable. What does your answer tell you about the situation?

2. The members of our math dept. are ordering Pi Day T-shirts. There is a one-time charge of $99 for artwork on the T-shirts and a $12 charge for each T-shirt ordered. If t represents the number of T-shirts ordered, write an equation that represents the total cost, C, in dollars **per** T-shirt ordered.

a) What is the most expensive price shirts could be? (imagine only 1 person orders a shirt)

b) What is the cheapest price shirts can be?

c) What is the range for the cost of the shirts?

3. A tank can be filled using pipes A, B or both. It takes pipe A, working alone, 18 hours to fill the tank. It takes both pipes, working together, 9.9 hours to fill the tank. How long does it take pipe B, working alone, to fill the tank?

a) Set up equation. (A + B = together)

b) Solve for the variable. What does your answer tell you about the situation?

4. Mr. Loney can fill a calculator case in 4 minutes. One of his students, Brandon, can empty the case in one minute. How long would it take Brandon to empty the case if Mr. Loney keeps filling it up at the same time?

a) Set up equation. (Brandon – Loney = together)

b) Solve for the variable. What does your answer tell you about the situation?

5. You have subscribed to a cable television service. The cable company charges you a one-time installation fee of $30, and a monthly fee of $50. The function gives the average cost per month as a function of the number of months you have subscribed to the service:

$$C = \frac{30+50m}{m}.$$

a) What is the most expensive price per month for cable?

b) What is the cheapest price per month for cable?

c) What is the range for the average monthly cost for cable?

6. You are organizing your high school's sports banquet. The banquet rental hall is $350. In addition to this one time charge, the meal will cost $8.50 per plate. Mr. Spain has decided that you can only go if the cost per student C(x), is below $15. Write an inequalities that could be used to find the number of students, x needed to offer the banquet?

a) What is the most expensive price the meal could cost?

b) What is the cheapest meals can be?

c) What is the range for the cost of the meals?

7. At 10 AM Danny's father asks him to weed the garden. Danny knows this will take him 4 hours working alone. When it is his older brother Mike's turn to do the job, it takes Mike 6 hours working alone. Since Mike and Danny have a golf reservation at 1 PM, they agree to work together. When will they finish if they work together?

a) Set up equation. (Danny + Mike = together)

b) Solve for the variable. What does your answer tell you about the situation?