Name _____ Date _____ Hour _____

Problem 2.3 – Solving Linear Equations

Sandy's Boat House rents canoes. The equation **c = 0.15t + 2.50** gives the charge *(c)* in dollars for renting a canoe for *(t)* minutes.

- Explain what the numbers in the equation tell you about the situation.

- Rashida and Serena apply for jobs at Sandy's. The manager tests them with three questions.

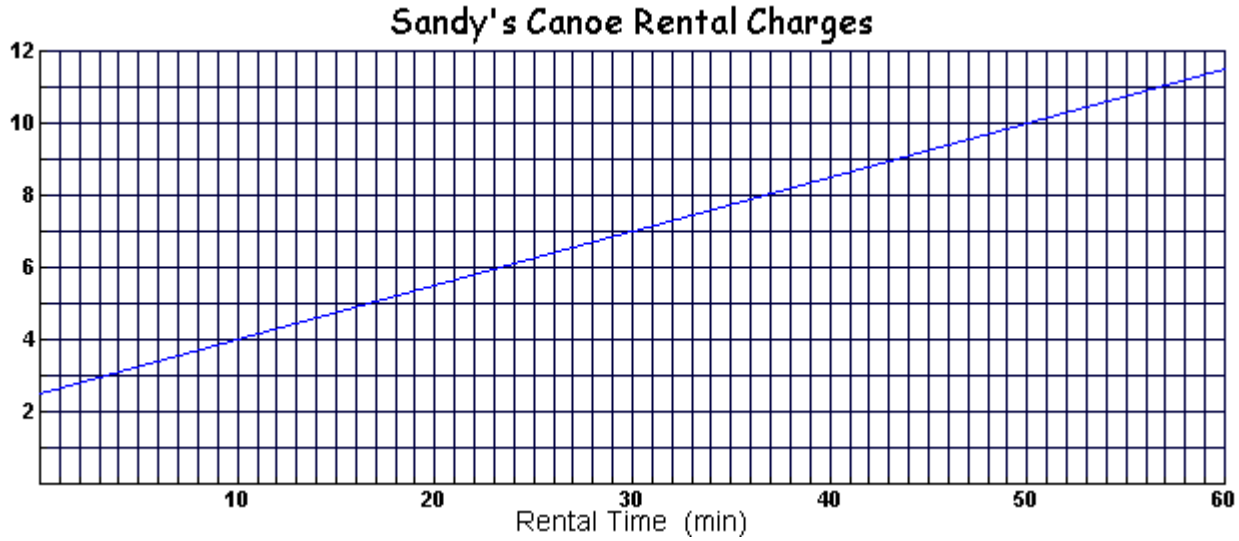
1.) What is the charge for renting a canoe for **30 minutes**?

2.) A customer is charged **$8.50**. How long did he use the canoe?

3.) A customer has **$10** to spend. How long can she use the canoe?

Problem 2.3 – Solving Linear equations

A. Rashida uses a graph of **c = 0.15t + 2.50**. Explain how to use the **graph** to estimate the answers to the manager's questions.



B. Rashida could use a table instead of a graph. Explain how to use a **table** to estimate answers to the questions.

C. Serena wants to find the exact answers, not estimates. For the second question, she solves the linear equation **0.15t + 2.50 = 8.50**. She reasons as follows:

- If 0.15t + 2.50 = 8.50, then 0.15t = 6.00
- If 0.15t = 6.00, then t = 40
- I check my answer by substituting 40 for t:

0.15 (40) + 2.50 = 8.50
6.00 + 2.50 = 8.50
8.50 = 8.50

Is Serena's work correct? How do you know?

Problem 2.3 – Solving Linear equations

D. For the third question, Rashida says, "She can use the canoe for 50 minutes if she has $10." Serena says there are other possibilities. For example, 45 minutes or 30 minutes. She says you can answer the question by solving the inequality: **$0.15t + 2.50 \leq 10$**. This represents the times for which the rental charge is ***at most*** $10.

1. Use a **table** to find all of the times for which the inequality is true.

2. Use a **graph** to find all of the times for which the inequality is true.

3. Use an **equation** to find all of the times for which the inequality is true.

4. Express the solution as an **inequality**.

E. River Fun Paddle Boats competes with Sandy's. The equation **$c = 4 + 0.10t$** gives the charge *(c)* in dollars for renting a paddle boat for *(t)* minutes.

1. A customer at River Fun is charged **$9**. How long did the customer use a paddle boat? What was your strategy?

2. Suppose you want to spend **$12 at most**. How long could you use a paddle boat? Explain your strategy.

3. What is the charge to rent a paddle boat for **20 minutes**? What was your strategy?