**Linear Expressions – Word Problem Practice**

**For each problem, write the algebraic expression, then determine if you are looking for y (term value) or x (term number). Lastly, solve for the desired variable.**

1. A plumber charges $25 for a service call plus $50 per hour of service. Write an equation in slope-intercept form for the cost, C, after h hours of service. What will be the total cost for 8 hours of work? 10 hours of work?
2. A plumber charges $25 for a service call plus $50 per hour of service. Write an equation in slope-intercept form for the cost, C, after h hours of service. What will be the total cost for 8 hours of work? 10 hours of work?
3. A canoe rental service charges a $20 transportation fee and $30 dollars an hour to rent a canoe. Write and graph an equation representing the cost, y, of renting a canoe for x hours. What is the cost of renting the canoe for 6 hours?
4. Attorney A charges a fixed fee on $250 for an initial meeting and $150 per hour for all hours worked after that. Write an equation in slope-intercept form. Attorney B charges $150 for the initial meeting and $175 per hour. Find the charge for 26 hours of work for each attorney. Which is the better deal? At how many hours does this attorney become a better deal?
5. A video rental store charges a $20 membership fee and $2.50 for each video rented. Write and graph a linear equation (y=mx+b) to model this situation. If 15 videos are rented, what is the revenue? If a new member paid the store $67.50 in the last 3 months, how many videos were rented?
6. Casey has a small business making dessert baskets. She estimates that her fixed weekly costs for rent and electricity are $200. The ingredients for one dessert basket cost $2.50. If Casey made 40 baskets this past week, what were her total weekly costs? Her total costs for the week before were $562.50. How many dessert baskets did she make the week before?
7. Jim has to choose between two gym membership plans.

Plan A: $50 monthly membership fee and $10 per visit.

Plan B: costs $25 monthly one time membership fee and $15 per visit

1. Write expressions for both of these situations.
2. How much does it cost for each gym if Jim visits 12 times a month?
3. After how many visits does it cost the customer the same amount?

***Challenge Problems***

1. A bus company took a tour bus on the ferry when there were 30 people aboard. The ferry charged the bus company $180. The following week, the bus had 50 people on board and the ferry charged them $220. How much is the "base rate" for the empty bus? How much does each person cost? Show this using y = mx + b form.
2. I rent a gym for $150.00 for 30 students. Another time I rent the gym for @270.00 for 70 students. I need to find a fixed rate.
3. Betsy works as waitress. Today she worked an 8 hour shift, and was paid $ 92.00 plus $250 in tips. Find how much Betsy is paid per hour. Write an equation using Y = MX + B Form.