

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

### Linear equations Word Problems

1. Suppose that the water level of a river is 34 feet and that it is receding at a rate of 0.5 foot per day. Write an equation for the water level,  $L$ , after  $d$  days. In how many days will the water level be 26 feet?

2. Seth's father is thinking of buying his son a six-month movie pass for \$40. With the pass, matinees cost \$1.00. If matinees are normally \$3.50 each, how many times must Seth attend in order for it to benefit his father to buy the pass?

3. For babysitting, Nicole charges a flat fee of \$3, plus \$5 per hour. Write an equation for the cost,  $C$ , after  $h$  hours of babysitting. What do you think the slope and the y-intercept represent? How much money will she make if she baby-sits 5 hours?

4. 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?

5. Rufus collected 100 pounds of aluminum cans to recycle. He plans to collect an additional 25 pounds each week. Write and graph the equation for the total pounds,  $P$ , of aluminum cans after  $w$  weeks. What does the slope and y-intercept represent? How long will it take Rufus to collect 400 pounds of cans?

6. 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?

7. A caterer charges \$120 to cater a party for 15 people and \$200 for 25 people. Assume that the cost,  $y$ , is a linear function of the number of  $x$  people. Write an equation in slope-intercept form for this function. What does the slope represent? How much would a party for 40 people cost?
8. An attorney 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. Find the charge for 26 hours of work.
9. 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?
10. 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  
At what point does one plan become a better deal? Write an equation for each situation. Graph them on the same coordinate plane, and compare the graphs.
11. A Pizza restaurant offers the following deals”  
Deal #1: \$8.99 for on large pizza and \$5 for each additional large pizza on the same order  
Deal#2: \$6.00 per large pizza  
At what number of pizzas does Deal #1 become a better deal? What is the cost of 10 pizzas for each deal?  
What is the cost per pizza in Deal #1? Which is the better deal and why?
12. A doctor measured a patient’s resting pulse rate at 80 beats per minute. Draw a graph to show the relationship between time and the number of times the patient’s heart beats.  
Use it to estimate how many times the patient’s heart will beat in 18 minutes. Write an equation in  $y = mx + b$  form.
13. Carmen works as waitress. Today she worked an 8 hour shift, and was paid \$ 92.00. Plot a graph of the amount Carmen earns against the time she works for. Then find how much Carmen is paid per hour.