**Inequalities in the Real World**

1. Chloe and Charlie are taking a trip to the pet store to buy some things for their new puppy. They know that they need a bag of food that costs $7, and they also want to buy some new toys for the puppy. They find a bargain barrel containing toys that cost $2 each.
2. Write an expression for the amount of money they will spend if they purchase a bag of food and *t* toys.
3. Together, Chloe and Charlie can spend no more than $40. Use this information and the expression you wrote in part (a) to write an inequality for finding the number of toys they can buy.
4. Solve the inequality and graph the solution on the number line below.
5. Explain what the graph of the solution means?
6. Valley Video charges a $15 annual membership fee plus $3 for each movie rental. Tanya puts aside $100 for renting movies for the year. How many movies can Tanya rent from Valley Video? Use an inequality to solve this problem. Graph your solution on the number line and explain the meaning of your graph in a sentence.
7. You are a salesperson at Nissan. Each month you earn $2,200 plus one-fifteenth of your sales. You want to earn more than $4000 this month. How much must you sell this month in order to earn more than $4000? Use an inequality to solve this problem. Graph your solution on the number line and explain the meaning of your graph in a sentence.
8. Joe’s car needs work. The mechanic charges $140 for parts plus $48 per hour for labor. The mechanic said the bill will be at least $300. What is the possible number of hours that the mechanic will work on Joe’s car? Use an inequality to solve this problem. Graph your solution on the number line and explain the meaning of your graph in a sentence.
9. A popular cellular phone family plan provides 1,500 minutes. It charges $89.99/month for the first two lines and $9.99/month for every line after that. Unlimited text messages for all phone lines costs $30.00/month, and Internet costs $10.00/month per phone line. If a family with a $200 monthly budget buys this plan and signs up for unlimited text messaging and Internet on each phone line, how many cell phone lines can they afford? Use an inequality to solve this problem. Graph your solution on the number line and explain the meaning of your graph in a sentence.