

Name: \_\_\_\_\_  
Algebra Blizzard Bag #7

Tow O' War – Performance Assessment

You are a lucky person. You saved all your money and you bought your first car. Too bad the car broke down after only one month. Because you don't have much money, you decide to shop around for the right towing company. You don't know how many miles it will be to return the car to your garage.

1. Suppose you call three companies. For each company in the tables below, fill in mileage estimates and then evaluate the given expression, where  $m$  represents the number of miles.

Company A	Dollar Rate $50 + m$
Number of Miles	Cost

Company B	Dollar Rate $30 + 2m$
Number of Miles	Cost

Company C	Dollar Rate $80 + 0.10m$
Number of Miles	Cost

- a. Explain why you gave those mileage estimates for each table.
- \_\_\_\_\_
- b. Explain how to evaluate the cost for each company.
- \_\_\_\_\_
2. Suppose you know how many miles your car will have to be towed, as shown in the table. Which company should you choose? Use your tables in Question 1 to choose the company that costs the least.

Mileage (mi)	Company
5	
10	
15	
20	

3. Suppose you have at most \$100 to spend.

- a. Explain how you would determine the most number of miles that can be driven by each tow truck so that you keep your costs under \$100.
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- b. List the most number of miles in the table.

Company	Mileage
A	
B	
C	

### **Grocery Store Game - Inequalities**

Justin is a lucky guy! He has a chance to win a trip on the TV game show *You Can Price Like a Pro*. All he has to do is win the Grocery Store Game. In this game, Justin is shown six grocery-store items without being shown the prices. He must buy multiples of items until he has a total between \$20 and \$21 inclusive. If he doesn't reach \$20 with his first item, he continues buying items and adding to his total, until he either wins or goes over \$21.

4. Justin begins by buying six bottles of hand lotion.

- a. Write a compound inequality to find the range of prices for one bottle of lotion that would make Justin win instantly.

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- b. Solve the compound inequality. Round each answer to the hundredths place.

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- c. In your work for part b, you should have gotten a repeating decimal. Explain how you decided whether to round this number up or down.

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- d. Explain how you would graph the solutions in part b on a number line.

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