Middle School 890

7th Grade Mathematics

Expressions and Equations Exam

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**DIRECTIONS: For each question, create an algebraic equation or inequality to represent the scenario, then solve it to answer the problem. Make sure to *show all of your work*, define your variables, and your final answer should be in a complete sentence. Work should be *neat and organized*.**

1. Mr. Trager has $500.00 to spend at a bicycle store. All prices listed below include tax.
* He buys a new bicycle for $273.98
* He buys 3 bicycle reflectors for $7.23 each and 1 bicycle helmet for $42.36.
* He plans to use the remaining money to buy new cycling outfits for $78.12 each.

What is the **greatest** number of cycling outfits that Mr. Trager can buy with the remaining money?

***Equation or Inequality*** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Jim needs to rent a car. A rental company charges $21.00 per day to rent a car and $0.10 for every mile driven.
* He will travel 250 miles.
* He has $115.00 to spend.

Write an inequality that can be used to determine, *d*, the maximum number of days that Jim can rent a car.

***Inequality*** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Jim believes the maximum whole number of days he can rent the car is 5. Is he correct? Why or why not?

***Explain your answer***.

1. Members of a baseball team raised $967.50 to go to a tournament. They rented a bus for $450.00 and budgeted $28.75 per player for meals. They will spend all the money they raised. Write and solve an equation that models this situation and could be used to determine the number of players, *p*, the team could bring to the tournament.

***Equation*** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Jenny has $500 in a savings account at the beginning of the summer. She wants to have at least $200 in the account by the end of the summer. She withdraws $25 each week for food, clothes, and movie tickets. Write and solve an inequality that can be used to determine the number weeks Jenny can withdraw the money from his account. Then, graph the solution set using a number line.

***Inequality*** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Jenny believes she can only withdraw from her account for 10 weeks before her account has at least $200 dollars in it.

***Explain your answer***.

1. Hernandez has $100 to spend on parking and admission to the zoo. The parking will cost $7, and admission will cost $15.50 per person, including tax. Write and solve an equation that can be used to determine the number of people that she can bring to the zoo, including herself.

***Equation*** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_