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Linear inequality word problems

1.More than 450 students traveled to a state park for a field trip. The school allowed 6 students to travel by car, and the rest traveled on 11 buses, each of which held the same number of students. If there were s students in each bus, which inequality best represents this situation?

A. $11s + 6 > 450$
B. $11s + 6 < 450$
C. $6s + 11 > 450$
D. $6s + 11 < 450$

2.A barber charges $12 for a haircut. His operating expenses are, on average, $37 per day. He calculates his profit by subtracting his operating costs from the money he earns from the haircuts he gives. In a given day, the barber expects to make a profit of at least $86. If the barber gives h haircuts in a day, which inequality best models this situation?

A. $12h - 37 \geq 86$
B. $12(h - 37) \geq 86$
C. $12h + 37 \geq 86$
D. $12(h + 37) \geq 86$

3.To rent a car for one week, a car rental company charges a $200 base price as well as $0.45 per mile. Jennifer will rent a vehicle at this company, but she has a $275 budget. Which of the following is a possible number of miles that Jennifer can drive without exceeding her budget?

A. 166 miles
B. 167 miles
C. 168 miles
D. 169 miles

4.In the year 2000, the average American consumed 8.3 gallons of whole milk per year. This amount has been decreasing by 0.3 gallons per year. Which inequality can be used to find the number of years, t, since 2000 when whole milk consumption was greater than 6.0 gallons per person per year?

A. $8.3 - 0.3t > 6.0$
B. $8.3 - 0.3(t - 2000) > 6.0$
C. $8.3 - 0.3t < 6.0$
D. $8.3 - 0.3(t - 2000) < 6.0$

5.An amusement center charges a $45 flat fee for any birthday party plus $3.50 for each guest after the first one. Josiah wants to spend no more than $200 for his birthday party. If there are x guests, which of the following inequalities best models the situation above?

A. $45 + 3.50x \leq 200$
B. $45 + 3.50(x - 1) \leq 200$
C. $45x + 3.50 \leq 200$
D. $45(x - 1) + 3.50 \leq 200$

6.Hamadi is renting a car. With his extreme coupons, the rental charge is $17.50 per day plus $0.16 per mile. His company will reimburse Hamadi for $33 of this portion of the travel expenses. If he rents the car for one day, what is one possible number of miles paid for by the company?

A. 53
B. 97
C. 110
D. 150

7.Arianna and Hannah are conducting an experiment to test the difference threshold for sense of touch on the forehead. For trial 1, Hannah closes her eyes while Arianna gently touches 2 paperclip points 3 millimeters (mm) apart on Hannah's forehead. Then Hannah reports whether she could feel 1 or 2 points. For each of the next trials, Arianna and Hannah repeat this process, each time with the points 2 more mm apart. Hannah reports feeling 1 point until the points are 15mm apart, when she begins reporting that she feels 2 points. Which inequality best represents the trial numbers in which Hannah feels 2 points?

A. $t > 6$
B. $t < 6$
C. $t \geq 7$
D. $t \leq 7$

8.A small airplane can carry less than 1050 pounds of luggage and mail. Tuesday's load of mail weighs 490 pounds. If each passenger brings 70 pounds of luggage, what is the greatest possible number of passengers that can travel on the airplane on Tuesday?

A. 7
B. 8
C. 14
D. 15

9.Members of the wrestling team are planning to sell pre-ordered programs at matches. The cost to print the programs is $150 plus $0.50 per program. They plan to sell each program for $2. If profit is the amount of money earned from selling programs minus the expenses of printing the programs, how many programs must they sell to make a profit of at least $500?

A. 260
B. 261
C. 433
D. 434

10.Joanne and Richard volunteer at a hospital. Joanne volunteers 4 hours more per week than Richard does. In a given week, they do not volunteer for more than a combined total of 16 hours. If x is the number of hours that Richard volunteers, which inequality best models this situation?

A. $x + 4 \leq 16$
B. $2x + 4 \leq 16$
C. $2x + 8 \leq 16$
D. $2x - 4 \leq 16$

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Thanks

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