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

**Writing Inequalities**

**Supplement**

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| **Part I**  **Key Words** | You can write inequalities to represent real-world situations.   |  |  |  |  | | --- | --- | --- | --- | | **Less Than**  < | **Less Than or Equal To**  < | **Greater Than**  > | **Greater Than or Equal To**  > | | Is smaller than  Is less than  Below | Maximum  At most  Not more tan  Is not greater than | Is more than  Is greater than  Is larger than  Above | Minimum  At Least  No less than  No smaller than | |
| **Part II**  **Writing Inequalities Examples** | **Writing Inequalities**   |  |  | | --- | --- | | Example 1: In many states, you must be at least 16 years old to obtain a driver’s license.   * Give 2 examples: \_\_\_\_\_\_ \_\_\_\_\_\_ * Give 2 NON examples: \_\_\_\_ \_\_\_\_ * What is the key word(s)?   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   * Write the inequality:   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   * Graph the inequality: | Example 2: A bus can hold at most 54 passengers.   * Give 2 examples: \_\_\_\_\_\_ \_\_\_\_\_\_ * Give 2 NON examples: \_\_\_\_ \_\_\_\_ * What is the key word(s)?   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   * Write the inequality:   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   * Graph the inequality: | |
| **Part III**  **Writing and SOLVING Inequalities Examples** | Example 3: Samuel has $1900 in the bank. He needs to save at least $3500 so he can go on vacation next summer. If he plans to save $35 per week, how many weeks will he need to save his money in order to have enough to go on vacation?  Key Word: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Solution: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**      Example 4: Ben and his friends rented a car in order to attend a basketball game. The car rental company charged $51.00 plus an additional $.07 per mile. Ben and his friends spent no more than $82.00. What is the maximum number of miles (m) that could have been driven for the one day rental?  Key Word: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Solution: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**    **Try On Your Own:**   1. Jay lost his mother’s favorite necklace, so he will rent a metal detector to try to find it. A rental company charges a one-time rental fee of $15 plus $2 per hour to rent a metal detector. Jay has only $35 to spend. What is the maximum amount of time he can rent the metal detector?   Key Word: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Solution: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| **Part IV**  **Rounding Rules** | When solving inequalities, we ignore the rounding rule that says:   * 1. to 0.4 round DOWN and 0.5 to 0.9 round UP   Instead, we must consider the following when deciding how to round:  Round UP: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Round DOWN: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Part V**  **Class Work** | *Directions:* Write an inequality for each word problem. Then, solve it. Put a box around your final answer. BE SURE TO INCLUDE UNITS!   1. Rodrigo needs at least $560 to pay for his spring break expenses. He is saving $25 from each of his weekly paychecks. How long will it be before he can pay for his trip? 2. Bryan wants to eat at most 700 calories at a meal that includes a turkey sandwich and chips. The sandwich has 490 calories, and the chips have 7 calories each. Write an inequality to determine the maximum number of chips he can eat. 3. Kathy is stacking encyclopedia volumes on a library bookshelf. Each volume is 2.5 inches wide. The shelf is 48 inches wide. Write an inequality that represents the greatest number of volumes Kathy can stack on the shelf. Then, solve it. 4. The American history classes are planning a trip to a local museum. Admission is $8 per person. Determine how many people can go for $260. 5. Tae-Aira currently has $180 in her bank account. If she saves $45 each week, write an equation to find out how many weeks, w, she will take to save at least $900. 6. Cheyenne needs to save at least $85.00 to buy a new pair of Nike shoes. She already has $30.00 saved. If she can save $5.00 per week, write an inequality to determine how many weeks it will take her to save up for the shoes. 7. The monthly charge for Emilio’s cell phone service is $4.95 flat rate plus $0.07 for each minute. If Emilio budgets $15.00 for his cell phone bill, write an inequality to determine the maximum number of minutes Emilio can use a month. |
| **Part IV**  **Class Work**  **continued** | 1. Kaleahea is going to New York City. The airfare will be $800 and it will cost $40 per day. Write an equation to determine the maximum number of days Kaleahea can spend in New York City if she can spend no more than $1,120. 2. Mr. Kemp starts with 15 songs on his new iPod and plans to add 6 songs each month. How long will he have had his iPod when he has at least 57 songs?      1. In order to be admitted for a certain ride at an amusement park, a child must be greater than or equal to 36 inches tall and less than 48 inches tall. Which graph represents these conditions? |
| **Part V**  **Homework** | 1. The yearbook club washes cars to raise at least $600. The club charges $3 for each car (c) that they wash. Which of these inequalities models this situation?   a. 3c < 600 b. 3c < 600 c . 3c > 600 d. 3c > 600   1. A school store sells pens for $1.29 each and notebooks for $2.25 each. Paul bought p pens and n notebooks. He spent less than $10. Which of these inequalities represents the situation?   a. 2.25p - 1.29n < 10 b. 2.25n - 1.29p > 10  c. 2.25n + 1.29p < 10 d. 2.25n + 1.29p > 10   1. A company makes a standard model flashlight (s) and a deluxe model flashlight (d). The company makes a $3 profit on each standard model and a $4 profit on each deluxe model. The company wants to make a profit of at least $320. Which of these inequalities represents the situation? a. 3s + 4d < 320 b. 3s + 4d > 320 c. 4s + 3d < 320 d. 4s + 3d > 320 2. A television quiz show awards 4 points for each right answer (r) and subtracts 2 points for each wrong answer (w). Mikes wants to score at least 80 points. Which of these inequalities represents the situation? 3. 2r - 4w < 80 b. 4r - 2w < 80 c. 2r - 4w > 80 d. 4r - 2w > 80 4. You are a state patrol officer who is assigned to work traffic enforcement on a highway. The posted minimum speed on the highway is 45 miles per hour and the posted maximum speed is 65 miles per hour. You need to detect vehicles that are traveling outside the posted speed limits. Write these conditions as a compound inequality and graph it.     Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |