

Name:

Date:

Period:

Translation of Inequality Word Problems

Read the words carefully and take an extra second to think it through. Common translations for inequalities are:

Greater Than $>$	Less Than $<$	Greater Than or Equal To \geq	Less Than or Equal To \leq
More than Above Greater than Larger than Exceeding	Fewer than Below Less than	Minimum No fewer than At least Top No less than	Maximum No more than Not above Does not exceed At most Bottom

- After you write your “Let” statements, figure out what inequality sign you will use based on the wording in the problem, then figure out what to write on each side of the inequality sign.
- If it is a compound inequality, figure out your “boundaries” first, then decide what goes in between (is it just “x” or is it an expression involving more than “x”?)
- Once you SOLVE your inequality, you must INTERPRET your answer and write the APPROPRIATE answer in statement form.

Try these on a separate piece of paper in your notebook.

1. Five times a number increased by 8 is less than 63. Find the greatest possible integer value for the number.
2. The length of a rectangle is 5 cm. more than its width. The perimeter is at least 66 cm. Find the minimum measures of the length and width.
3. A club agreed to purchase at least 250 tickets to a show. If it agreed to buy 80 less orchestra tickets than balcony tickets, what was the least number of balcony tickets it could buy?
4. Six more than 4 times a whole number is less than 60. Find the maximum value of the number.
5. The length of a rectangle is 10 cm less than 3 times its width. If the perimeter of the rectangle is at most 180 cm, find the greatest possible length of the rectangle.

Compound Inequality Problems

6. The human ear can only detect sounds between the frequencies 20 Hertz and 20,000 Hertz. Write a compound inequality that describes the frequency of sounds humans **cannot** hear.
7. A company is manufacturing an action figure that must be at least 11.2 centimeters and at most 11.4 centimeters tall. Write and graph a compound inequality that describes how tall the action figure can be.
8. The recommended air pressure for the tires of a mountain bike is at least 35 pounds per square inch (psi), but no more than 80 pounds per square inch. If a bike’s tires have 24 pounds per square inch, what is the recommended range of air that should be put into the tires?
9. Eight less than a number is no more than 14 and no less than 5. Write a compound inequality to model this problem and solve.