EXTRA PRACTICE 14
Applications and Problem Solving with Inequalities
Use after Section 2.8 **Name**_____
_____

Translate to an inequality.

1. A number is less than 9. _____

2. A number is greater than or equal to $7\frac{6}{8}$. _____

3. That bike can be ridden at most 15 mph. _____

4. The price of the TV is at least $175. _____

5. The cost is at most $3540. _____

6. Three times a number plus 18 is less than 8. _____

Solve.

7. Your test grades are 81, 93, 78, and 84. Determine (in terms of an inequality) what scores on the last test will allow you to get an average test grade of at least 86. _____

8. The formula $R = -0.28t + 20.8$ can be used to predict the world record in the 200-m dash t years after 1920. Determine (in terms of an inequality) those years for which the world record will be less than 18.5 sec. _____

9. Find all numbers such that the sum of the number and 28 is less than five times the number. _____

EXTRA PRACTICE 14 (continued)
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10. One side of a triangle is 4 cm shorter than the base. The other side is 5 cm longer than the base. What lengths of the base will allow the perimeter to be greater than 22 cm?
    _____

11. The perimeter of a rectangular garden is not to exceed 34 ft. The length is to be 2 ft more than twice the width. What widths will meet these conditions? _____

12. Carol and Sam do volunteer work at a homeless shelter. Carol worked 4 hr more than Sam, and together they worked more than 18 hr. What possible number of hours did each work?
    _____

13. A landscape company is laying out a triangular flower bed. The height of the triangle is 20 ft. What lengths of the base will make the area at least 320 ft? _____

14. Find all numbers such that eight times the number is less than the number plus 35.
    _____

15. The width of a rectangle is 53 yd. Find all possible lengths such that the perimeter of the rectangle will be at least 486 yd. _____

16. A student is shopping for a new pair of sneakers and two pairs of jeans of the same kind. She is determined to spend no more than $135 for the three items. She buys sneakers for $48.50. What is the most that the student can spend for each pair of jeans? _____