Name

Class

Date

Solving Inequalities

**Write the inequality that represents the sentence.**

**1.** Four less than a number is greater than
negative 28.

**2.** Twice a number is at least 15.

**3.** A number increased by 7 is less than 5.

**4.** The quotient of a number and 8 is at most
negative 6.

**Solve each inequality. Graph the solution.**

**5.** 3(*x +* 1) + 2 < 11 **6.** 5*t* – 2(*t +* 2) ≥ 8

**7.** 2[(2*y −* 1) + *y*] ≤ 5(*y* + 3) **8.** 

 **9.** 5 – 2(*n +* 2) ≤ 4 + *n* **10.** −2(*w* – 7) + 3 > *w* – 1

**Is the inequality *always*, *sometimes,* or *never* true?**

**11.** 3(2*x +* 1) > 5*x −* (2 − *x*) **12.** 2(*x −* 1) ≥ *x +* 7

**13.** 7*x +* 2 ≤ 2(2*x −* 4) + 3*x* **14.** 5(*x −* 3) < 2(*x −* 9)

**Solve each compound inequality. Graph the solution.**

**15.** 3*x >* – 6 and 2*x <* 6

**16.** 4*x* ≥ − 12 and 7*x ≤* 7

**17.** 6*x <* − 12 or 5*x >* − 15

**18.** 2*x* > 3 − *x* or 2*x* < *x −* 3

**Solve each problem by writing and solving a compound inequality.**

**19.** A student believes she can earn between $5200 and $6250 from her summer job. She knows that she will have to buy four new tires for her car at $90 each. She estimates her other expenses while she is working at $660. How much can the student save from her summer wages?

**20.** Before a chemist can combine a solution with other liquids in a laboratory, the temperature of the solution must be between 39°C and 52°C. The chemist places the solution in a warmer that raises the temperature 6.5°C per hour. If the temperature is originally 0°C, how long will it take to raise the temperature to the necessary range of values?