TRANSLATING SENTENCES **Write the verbal sentence as an inequality. Then solve the inequality and graph your solution.**

23. Five more than x is less than 8 *or* 3 less than x is greater than 5.

24. Three less than x is greater than -4 *and* less than -1.

25. Three times the difference of x and 4 is greater than or equal to -8 *and* less than or equal to 10.

26. The sum of $-2x$ and 8 is less than or equal to -5 *or* 6 is less than $-2x$.

27. **TAKS REASONING** Consider the compound inequality $a > 3x + 8$ *or* $a > -4x - 1$. For which value of a does the solution consist of numbers greater than -6 *and* less than 5?

Ⓐ 16 Ⓑ 19 Ⓒ 23 Ⓓ 26

REASONING **In Exercises 28 and 29, tell whether the statement is *true* or *false*. If it is false, give a counterexample.**

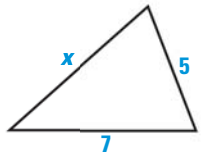
28. If a is a solution of $x < 5$, then a is also a solution of $x < 5$ *and* $x \geq -4$.

29. If a is a solution of $x > 5$, then a is also a solution of $x > 5$ *or* $x \leq -4$.

30. Is the converse of the statement in Exercise 28 *true* or *false*? *Explain*.

31. Is the converse of the statement in Exercise 29 *true* or *false*? *Explain*.

32. **GEOMETRY** The sum of the lengths of any two sides of a triangle is greater than the length of the third side.



a. Write and solve three inequalities for the triangle shown.

b. Use the inequalities that you wrote in part (a) to write one inequality that describes all the possible values of x.

c. Give three possible lengths for the third side of the triangle.

CHALLENGE **Solve the inequality, if possible. Graph your solution.**

33. $-18 < x - 23$ *and* $x - 16 < -22$

34. $-3y + 7 \leq 11$ *and* $y + 4 > 11$

35. $2m - 1 \geq 5$ *or* $5m > -25$

36. $n + 19 \geq 10$ *or* $-5n + 3 > 33$

PROBLEM SOLVING

EXAMPLE 2 on p. 381 for Exs. 37, 39, 40

37. **SLITSNAILS** Slitsnails are large mollusks that live in deep waters. Slitsnails have been found at elevations from -2600 feet to -100 feet. Write and graph a compound inequality that represents the elevations at which slitsnails have been found.

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EXAMPLE 6 on p. 383 for Exs. 38, 41–43

38. **ICEBERGS** The temperature inside an iceberg off the coast of Newfoundland, Canada, ranges from $-20°C$ to $-15°C$. Write and graph a compound inequality that describes the possible temperatures (in degrees Fahrenheit) of the iceberg's interior.

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