

Seeing Inequalities

Compare the three statements below.

- What is different about each?
- What is the same?

Write an algebraic expression in terms of x to represent each verbal expression in the box below the statement.

Seven less than five times a number	Seven is five times a number	Seven is less than five times a number

Using the algebraic expression for “seven less than five times a number”:

- Evaluate the expression for $x = 6$.
- Evaluate the expression for $x = -2$.
- Solve for x if the expression is equal to 7.
- Solve for x if the expression is more than 8.
- Solve for x if the expression is at most 17.
- Solve for x if the expression is at least 18.
- Solve for x if the expression is less than -22 .

Seeing Inequalities

Guided Practice

Write and solve inequalities to represent the following situations.

1. The tallest tree in Carin's yard is an elm, which is 16 feet tall. There is also a cherry tree in the yard. C = height of cherry tree in feet.
2. In football, the place kicker can score points two different ways. Coach Hill expects his kicker to score at least 50 points during the season. C = coach's expectation.
3. Cameron's parents have limited "Back to School" shopping to no more than \$150. C = Cameron's spending limit.
4. Chico is five feet tall. When he stands on a chair, he can reach at most 16 feet. C = height of the chair in feet.
5. The price of a pair of sandals is reduced by \$5. Cora has \$16, but that is not enough to buy the sandals. C = price of sandals before the discount.
6. Canae is making candy. Her brother ate 5 ounces of the candy, and now there is less than a pound. C = Original weight of the candy in ounces.

Practice Problems

Directions: Write an inequality for each of the problem situations below. Solve each inequality, giving the solution in **both** symbolic and number line form.

1. A number decreased by -4 is at least 9.
2. The sum of twice a number and 5 is less than 17.
3. Five times a number decreased by 10 is greater than -5 .
4. Four times a number is at least -48 .
5. A number divided by negative six is no less than 5.
6. Charlotte must have at least 320 points in her science class to get a B or better. She needs at least a B so she can play on the softball team. Charlotte currently has 168 points from four tests and 79 points from her quizzes. Charlotte will be taking her final exam worth 100 points. What must Charlotte score on the final exam to reach her goal?