

## 8.5 Inequalities (6.EE.5 and 6.EE.8)

Key

### Vocabulary

Inequality: A math sentence that says two quantities are not equal.

Symbols:  $<$  less than,  $>$  greater than,  $\leq$  less than or equal to,  $\geq$  greater than or equal to

### Guided Practice

Determine which number is a solution of the inequality.

1.)  $9 + a < 17$      (7), 8, 9      $\begin{matrix} 9 & 9 & 9 \\ +7 & +8 & +9 \\ \hline 16 & 17 & 18 \end{matrix}$

$a = 16$

2.)  $b - 10 > 5$      14, 15, (16)      $\begin{matrix} -14 & -15 & -16 \\ -10 & -10 & -10 \\ \hline 4 & 5 & 6 \end{matrix}$

$b = 16$

3.)  $6k \leq 30$      (4), 6, 8      $\begin{matrix} 6 \cdot 4 = 24 \\ 6 \cdot 6 = 36 \\ 6 \cdot 8 = 48 \end{matrix}$

$k = 4$

4.)  $17 + r \geq 50$      27, 30, (33)      $\begin{matrix} 17 & 17 & 17 \\ +27 & +30 & +33 \\ \hline 44 & 47 & 50 \end{matrix}$

$r = 33$

Is the given value a solution of the inequality?

5.)  $x - 5 < 5$       $x = 15$

$15 - 5 = 10 < 5$      no

6.)  $32 \geq 8n$       $n = 3$

$32 \geq 8 \cdot 3 = 24$      yes

7.)  $44 - k > 30$       $k = 14$

$44 - 14 = 30 > 30$      no

8.)  $44 - k \geq 30$       $k = 14$

$44 - 14 = 30 \geq 30$      yes

9.) If the bakery sells more than 45 bagels in a day, they make a profit. Use the inequality  $b > 45$  to determine which days the bakery makes a profit.

Day	Number of Bagels Sold
Monday	18
Tuesday	25
Wednesday	21
Thursday	36
Friday	50
Saturday	48
Sunday	40

The bakery makes a profit on Fridays and Saturdays.

### Partner Talk

Determine which number is a solution of the inequality.

$g - 3 > 4$      6, 7, or (8)      $\begin{matrix} -6 & -7 & -8 \\ -3 & -3 & -3 \\ \hline 3 & 4 & 5 \end{matrix}$

$g = 8$

**Building on the Essential Question** - How can mental math help you find solutions to inequalities?

Mental math can help determine if a certain number makes the inequality true.

Rate Yourself - \_\_\_\_\_ I understand how to solve inequalities.

\_\_\_\_\_ I still have questions about inequalities.