Equations and Inequalities with All Four Operations

Phil bought 6 used books at the library sale. Willa bought twice as many books as Phil. Write a number sentence that compares the number of books each bought.

Step 1 Write an expression for the books bought by each person.

Phil’s books
6

Willa’s books
6 \times 2

Step 2 Compare the two expressions, using \(=\), \(<\), or \(>\).

6 < 6 \times 2

Solution: \(6 < 12\)

Copy and complete. Use \(>\), \(<\), or \(=\).

1. \(2 \times 11 + 6 \times 1 \bigcirc 46 + 37\)
2. \(42 - 8 + 16 \bigcirc (2 \times 5) \times 5\)
3. \(50 \div 5 - 2 \bigcirc 80 \div 10\)
4. \(31 + (2 \times 7) \bigcirc 74 - 22\)
5. \(92 + (16 \div 4) \bigcirc 99 - (2 \times 4)\)
6. \(\frac{16}{2} - (2 + 1) \bigcirc 20 \div 5\)

Write \(+\), \(-\), \(\times\), or \(\div\) in each \(\bigcirc\) to make each number sentence true.

7. \(6 \bigcirc 2 + 8 = 2 \times 8 + 4\)
8. \(\frac{14}{2} \times 3 = 23 \bigcirc 2\)
9. \(8 \div 2 + 12 = 4 \times 3 \bigcirc 4\)
10. \(56 \div 8 \bigcirc 30 = 6 \times 6 + 1\)
11. \(90 \bigcirc 2 + 10 = 15 + 8 \times 5\)
12. \(36 - \frac{8}{2} = 8 \bigcirc (2 + 2)\)

Writing Math Hank looked at problem 12 and knew before he added each side of the equation that the missing operation had to be a \(\times\) or \(\div\). How did he know? Explain.