Name the property of equality the statement illustrates.

1. **Segment Add. Post.** If \( A, B, \) and \( C \) are collinear, then \( AC = AB + BC \).
2. **Transitive** \( m\angle 4 = m\angle 8 \) and \( m\angle 8 = m\angle 10 \), then \( m\angle 4 = m\angle 10 \).
3. **Symmetric** \( GE = OM \), then \( OM = GE \).
4. **Subtr.** If \( AB = CD \), then \( AB - EF = CD - EF \).
5. **Symmetric** If \( WX = YZ \), then \( YZ = WX \).
6. **Trans** If \( m\angle D = m\angle E \) and \( m\angle E = 45^\circ \), then \( m\angle D = 45^\circ \).

Use the property to complete the statement.

7. Reflexive Property of Angle Measure: \( m\angle C = \boxed{m\angle C} \)

8. Transitive Property of Equality: If \( CD = GH \) and \( GH = RS \), then \( CD = RS \)

9. Addition Property of Equality: If \( x = 5 \), then \( 14 + x = \boxed{19} \)

10. Symmetric Property of Equality: If \( BC = RL \), then \( RL = BC \)

11. Substitution Property of Equality: If \( m\angle B = 15^\circ \), then \( 3(m\angle B) = \boxed{45^\circ} \)

Solve the equation. Write a reason for each step.

12. \( 3x + 8 = 14 \)
   \[ 3x = 6 \] **Subtr.**
   \[ x = 2 \] **Div.**

13. \( -12x = 28 - 16x \)
   \[ 4x = 28 \] **Add**
   \[ x = 7 \] **Div.**

14. \( 7(x - 11) = 12x - 122 \)
   \[ 7x - 77 = 12x - 122 \] **Distr.**
   \[ 7x + 45 = 12x \] **Add**
   \[ 45 = 5x \] **Subtr.**
   \[ 9 = x \] **Div.**
   \[ x = 9 \] **Symm.**
Complete the logical argument by giving a reason for each step.

1. \( AB = BC \)
   \[
   \begin{align*}
   AC &= AB + BC \\
   \downarrow & \\
   AC &= AB + AB
   
   AC &= 2(AB)
   
   \end{align*}
   
   Given
   
   a. Seg. Add. Post. \\
   b. Subst. \\
   c. Simplify.
   
2. Given: \( AC = 36, AB = 3x, \) and \( 2x + 1 = BC \)
   \[
   \begin{align*}
   AC &= 36, AB = 3x, \text{ and } 2x + 1 = BC \\
   AB + BC &= AC \\
   3x + 2x + 1 &= 36 \\
   5x + 1 &= 36 \\
   5x &= 35 \\
   x &= 7
   
   \end{align*}
   
   a. Given \\
   b. Seg. Add. Post. \\
   c. Subst. \\
   d. Simplify. \\
   e. Subtr. \\
   f. Div.
   
3. Given \( AD = AB, DC = CB \)
   Show that the perimeter of \( \triangle ABC \) is equal to the perimeter of \( \triangle ABD \).
   \[
   \begin{align*}
   AD &= AB, DC = CB \\
   AC &= AC \\
   AD + DC + AC &= AB + CB + AC
   
   \end{align*}
   
   a. Given \\
   b. Reflexive \\
   c. Add.