

1. Identify the property that justifies the statement: If $3x - 7 = 23$, then $3x = 30$.

[A] Subtraction Property of Equality

[B] Addition Property of Equality

[C] Substitution

[D] Transitive Property of Equality

2. Identify the property that justifies the statement: If $\angle A \cong \angle B$, then $\angle B \cong \angle A$.

[A] Reflexive Property of Congruence

[B] Symmetric Property of Congruence

[C] Transitive Property of Congruence

[D] Division Property of Equality

For 3 – 8, name the property that justifies each statement.

3. If $\overline{AB} \cong \overline{CD}$ and $\overline{CD} \cong \overline{EF}$, then $\overline{AB} \cong \overline{EF}$

4. If $3x + 2 = 7$, then $3x = 5$.

5. If $y = 2$ and $x + y = 7$, then $x + 2 = 7$

6. If $4x = 16$, then $x = 4$

7. If $\angle A \cong \angle D$, then $\angle D \cong \angle A$.

8. $-3(x - 6) = -3x + 18$

Transitive
Subtr. prop
subst "
division "
Symm prop.
distr prop

9. Solve and prove the following equation. $3 = x$

Solve/Statements:

$$3x + 2 - 5x = 4x - 16$$

$$\begin{aligned} -2x + 2 &= 4x - 16 \\ -6x + 2 &= -16 \\ -6x &= -18 \\ x &= 3 \end{aligned}$$

Reason/Justification:

Given
Simplify
Subtr. prop.
"
division prop.

10. **Algebra** Find the value of each variable and the measure of each labeled angle.

