

Tuesday 10/15/19 (Homework)

Name

Key

Properties of Equality & Congruence

Date

Period

Name the property illustrated below.

1. If $UV = KL$ and $KL = 6$, then $UV = 6$.

Substitution property
or Reflexive property

2. If $m\angle 1 + m\angle 2 = m\angle 4 + m\angle 2$, then $m\angle 1 = m\angle 4$

Subtraction property

3. $\angle ABC \cong \angle ABC$

Reflexive
Property

4. If $\frac{1}{2}m\angle D = 45$, then $m\angle D = 90$.

Multiplication
property

5. If $\angle DEF \cong \angle HJK$, then $\angle HJK \cong \angle DEF$

Symmetric
Property

6. If $y = 12 - x$ and $2x + 3y = 10$, then $2x + 3(12 - x) = 10$.

Substitution
property

7. If $x = 5$ then $x + 3 = 8$

Substitution property

8. If $AB = MN$ and $MN = XY$, then $AB = XY$.

Transitive
property

9. If $2(AX) = 2(BY)$, then $AX = BY$

Division
Property

10. If $m\angle 1 = 40$ and $m\angle 2 = m\angle 1 + 50$, then $m\angle 2 = 90$

Substitution
property

Use the given property to complete each statement.

11. Reflexive Property of Congruence

$$\angle TRS \cong \angle TRS$$

12. Substitution Property

If $AB = 2$ and $AC = AB + BC$, then $AC = 2 + BC$

13. Subtraction Property of Equality

If $25x + 12 = 32$, then $25x = 20$
 $-12 -12$

14. Transitive Property of Equality

If $RM = OP$ and $OP = XT$, then $RM = XT$

15. Symmetric Property of Congruence

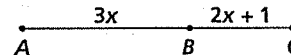
If $\angle TES \cong \angle BKC$, then $\angle BKC \cong \angle TES$

16. Division Property of Equality

If $4m\angle ABC = 120^\circ$, then $m\angle ABC = 30^\circ$

Fill in the reason that justifies each step.

Given: $AC = 36$



$$AB + BC = AC$$

17. Segment Addition ~~property~~ postulate

$$3x + 2x + 1 = 36$$

18. Substitution property

$$5x + 1 = 36$$

19. Simplify

$$5x = 35$$

20. Subtraction property

$$x = 7$$

21. Division property

Solve the equation and state the reason for each step.

$$5(2x - 1) = 9x + 4$$

Given

$$10x - 5 = 9x + 4$$

Distributive property

$$x - 5 = 4$$

Subtraction property

$$x = 9$$

Addition property