Worksheet # 28

Name _____

## *Properties of Equality & Congruence*

Date _____ Period _____

**Name the property illustrated below.**

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

_____

_____

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

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_____

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

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

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

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

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_____

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

_____

_____

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

_____

_____

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

_____

_____

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

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_____

**Use the given property to complete each statement.**

11. Reflexive Property of Congruence

$\angle TRS \cong$ _____

12. Substitution Property

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

13. Subtraction Property of Equality

If $25x + 12 = 32$, then $25x =$ _____

14. Transitive Property of Equality

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

15. Symmetric Property of Congruence

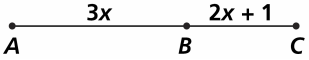
If $\angle TES \cong \angle BKC$, then _____

16. Division Property of Equality

If $4m\angle ABC = 120°$, then $m\angle ABC =$_____

**Fill in the reason that justifies each step.**

***Given**: $AC = 36$*




| | |
|---|---|
| $AB + BC = AC$ | 17. _____ |
| $3x + 2x + 1 = 36$ | 18. _____ |
| $5x + 1 = 36$ | 19. _____ |
| $5x = 35$ | 20. _____ |
| $x = 7$ | 21. _____ |

**Solve the equation and state the reason for each step.**

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