Name_____ Class_____ Date_____

Practice 2-4

Reasoning in Algebra

Use the given property to complete each statement.

1. Symmetric Property of Equality
If $MN = UT$, then ___?___.

2. Division Property of Equality
If $4m\angle QWR = 120$, then ___?___.

3. Transitive Property of Equality
If $SB = VT$ and $VT = MN$, then ___?___.

4. Addition Property of Equality
If $y - 15 = 36$, then ___?___.

5. Reflexive Property of Congruence
$\overline{JL} \cong$ ___?___

Give a reason for each step.

6.
$7x - 4 = 10$
$7x = 14$
$x = 2$

7.
$0.25x + 2x + 12 = 39$
$2.25x + 12 = 39$
$2.25x = 27$
$225x = 2700$
$x = 12$

Name the property that justifies each statement.

8. If $m\angle G = 35$ and $m\angle S = 35$, then $m\angle G \cong m\angle S$.

9. If $10x + 6y = 14$ and $x = 2y$, then $10(2y) + 6y = 14$.

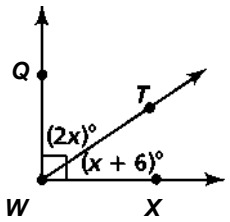
10. If $TR = MN$ and $MN = VW$, then $TR = VW$.

11. If $\overline{JK} \cong \overline{LM}$, then $\overline{LM} \cong \overline{JK}$.

12. If $\angle Q \cong \angle S$ and $\angle S \cong \angle P$, then $\angle Q \cong \angle P$.

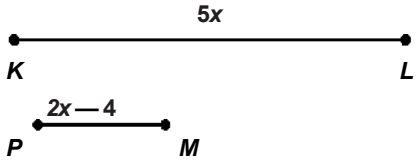
Fill in the missing information. Solve for *x*, and justify each step.

13.



$m\angle QWT + m\angle TWX = 90$
$2x + (x + 6) =$ ___?___
___?___ $+ 6 = 90$
___?___ $=$ ___?___
$x =$ ___?___

14.



$KL = 3(PM)$
$5x = 3$ ___?___
$5x =$ ___?___
___?___ $= -12$
$x =$ ___?___

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