

Name: _____

Key

Date: _____

Hour: _____

ACC only

Advanced Angle and Segment Relationships: Homework

Find the value of x and SR if R is between S and T . Justify steps!



1. $SR = 3x, RT = 2x + 1, ST = 6x - 1$

$SR + RT = ST$ seg. addition

$3x + 2x + 1 = 6x - 1$ Subst.

$5x + 1 = 6x - 1$

$2 = x$

$SR = 6$

2. $SR = 5x - 3, ST = 7x + 1, RT = 3x - 1$

$SR + RT = ST$ seg. addition

$5x - 3 + 3x - 1 = 7x + 1$ substitution

$8x - 4 = 7x + 1$ CLT - subst.

$x - 4 = 1$ subtraction

$x = 5$ addition

$SR = 22$

Find the value of the variable and ST if S is between R and T . Justify steps!

3. $RS = 2x, ST = 3x, RT = 25$

$2x + 3x = 25$ substitution

$5x = 25$ CLT division

$x = 5$
 $ST = 15$

4. $RS = 16, ST = 2x, RT = 5x + 10$

$16 + 2x = 5x + 10$ substitution

$16 = 3x + 10$ subtraction

$6 = 3x$ subtraction

$2 = x$
 $ST = 6$ division

5. $RS = 3y + 1, ST = 2y, RT = 21$

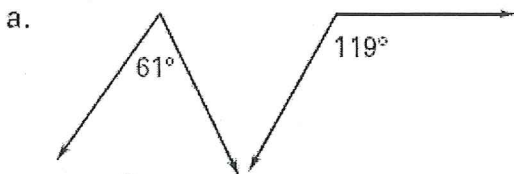
$3y + 1 + 2y = 21$ substitution

$5y + 1 = 21$ CLT

$5y = 20$ subtraction

$y = 4$ div. $ST = 8$

6. Determine whether the angles are complementary, supplementary, or neither.



Suppl.



Neither

ALL use Segment addition
 $RS + ST = RT$

7. a. $\angle A$ is a supplement of $\angle B$, and $m\angle B = 42^\circ$. Find $m\angle A$. 138°

b. $\angle C$ is a complement of $\angle D$, and $m\angle C = 42^\circ$. Find $m\angle D$. 48°

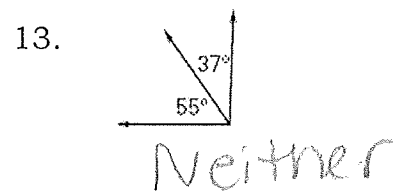
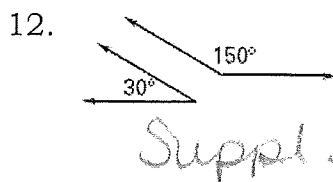
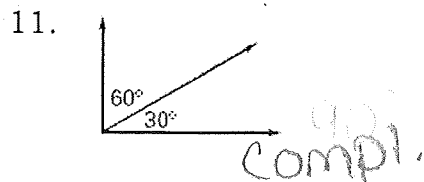
Decide whether the statement is true or false. If the statement is false, reword the statement so it is true.

8. Two angles are complementary if the sum of their measures is 180° . ⁹⁰ False

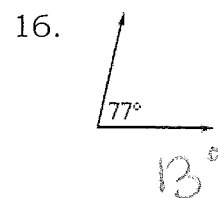
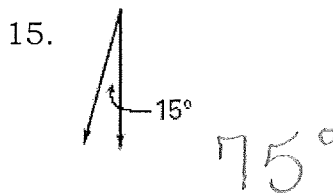
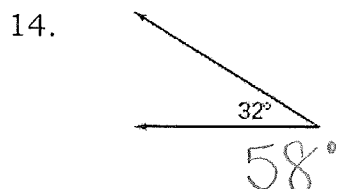
9. Two angles are supplementary if the sum of their measures is 180° . True

10. Two angles are adjacent angles if they share a common vertex. False
and share a common side w/ NO
Points in the interiors.

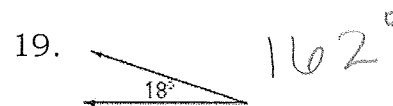
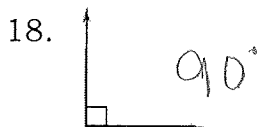
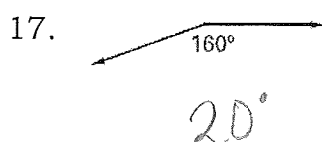
Determine whether the angles are complementary, supplementary or neither.



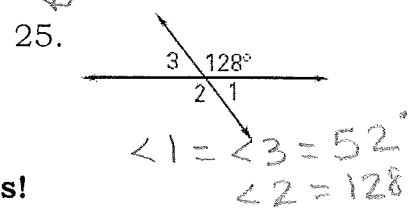
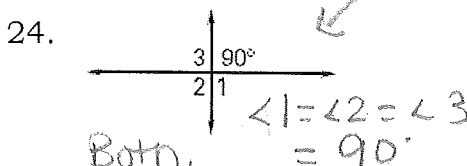
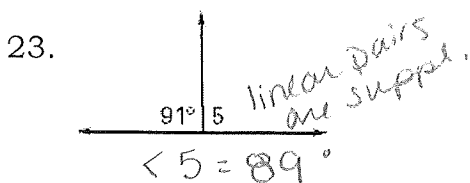
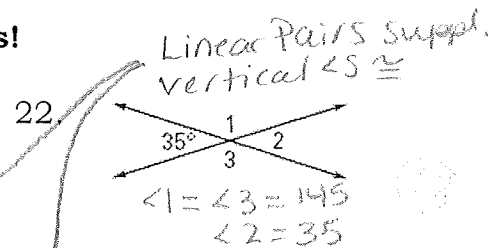
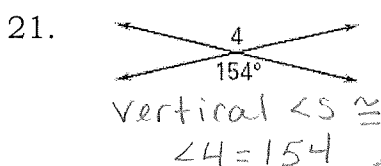
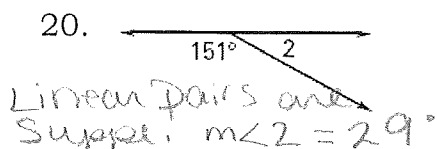
Find the measure of the complement of the given angle.



Find the measure of the supplement of the given angle.



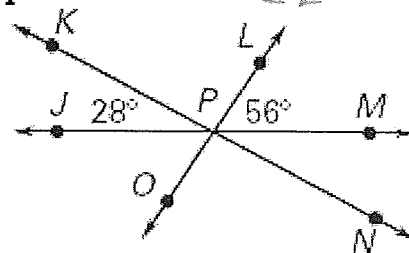
Find the measure of EACH numbered angle. Justify steps!



Use the diagram to complete the statement. Justify steps!

26. $m\angle KPL = 96^\circ$ 27. $m\angle LPN = 84^\circ$

28. $m\angle MPN = 28^\circ$ 29. $m\angle MPO = 124^\circ$



Find the value of the variable and find the $m\angle PQR$. Justify steps!

