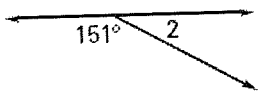
Name: Key Remember you need to show Justifications

Angle Relationships - Day _____

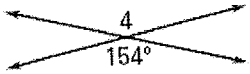
Hour: _____

Advanced Angle Relationships: Homework #1

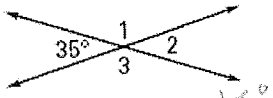
Find the measure of EACH numbered angle. Justify steps!

1. 

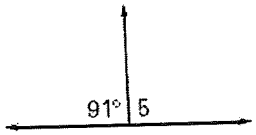
$\angle 2 = 29°$

2. 

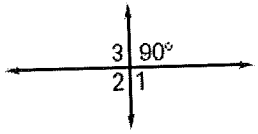
$\angle 4 = 154°$

3. 

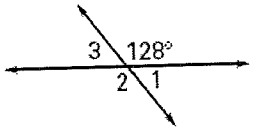
$\angle 3 = 146°$
$\angle 2 = 35°$
$\angle 1 = 145°$

4. 

$\angle 5 = 89°$

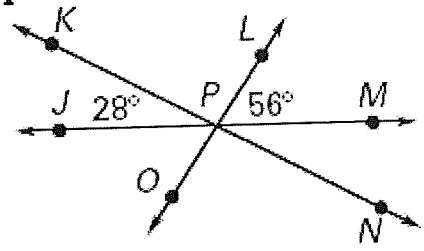
5. 

$\angle 1 \cong \angle 2 = \angle 3 = 90$

6. 

$\angle 1 = 52°$
$\angle 3 = 52°$
$\angle 2 = 128°$

Use the diagram to complete the statement. Justify steps!



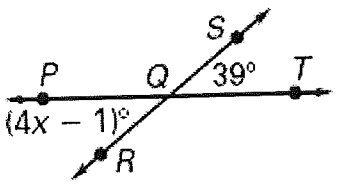
7. m<KPL= 96°

8. m<LPN= 84°

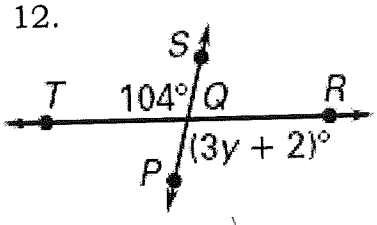
9. m<MPN= 28°

10. m<MPO= 124°

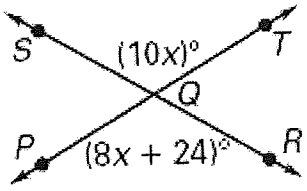
Find the value of the variable and find the m<PQR. Justify steps!

11. 

$x = 10$
$m\angle PQR = 39°$

12. 

$y = 34$
$m\angle PQR = 104$

13. 

$x = 12$
$m\angle PQR = 120°$

ALGEBRA In the figure, $\overrightarrow{CB}$ and $\overrightarrow{CD}$ are opposite rays, $\overrightarrow{CE}$ bisects $\angle DCF$, and $\overrightarrow{CG}$ bisects $\angle FCB$.

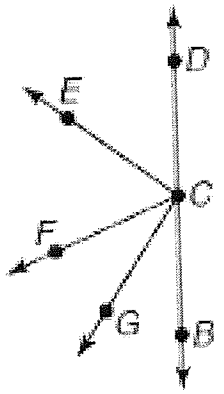
Justify steps!

14 If $m\angle DCE = 4x + 15$ and $m\angle ECF = 6x - 5$, find $m\angle DCE$.

$\angle DCE \cong \angle ECF$ def of $\angle$ bisector

$x = 10$

$\angle DCE = 55°$



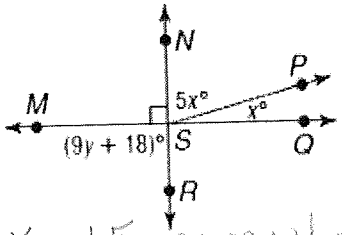
15 If $m\angle FCG = 9x + 3$ and $m\angle GCB = 13x - 9$, find $m\angle GCB$.

$\angle FCG \cong \angle GCB$ def of $\angle$ bisector

$3 = x$

$m\angle GCB = 30°$

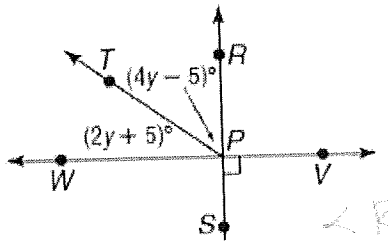
16. Find x and y so that $\overline{NR} \perp \overline{MQ}$.



$x = 15$ compl.

$y = 8$ linear pairs

17. Find y, $m\angle RPT$, and $m\angle TPW$.



$y = 15$ compl.

$\angle RPT = 55°$

$\angle TPW = 35°$

18. Two angles are complementary. The measure of one angle is 21 more than twice the measure of the other angle. Find the measures of the angles.

$x + y = 90$

$x = 2y + 21$

$2y + 21 + y = 90$

$3y + 21 = 90$

$3y = 69$

$y = 23°$

$x = 2(23) + 21$

$x = 67°$

19. If a supplement of an angle has a measure 78 less than the measure of the angle, what are the measures of the angles?

$x + y = 180$

$x = y - 78$

$y - 78 + y = 180$

$2y - 78 = 180$

$2y = 258$

$y = 129°$

$x = 129 - 78$

$x = 51°$