

Geometry Notes

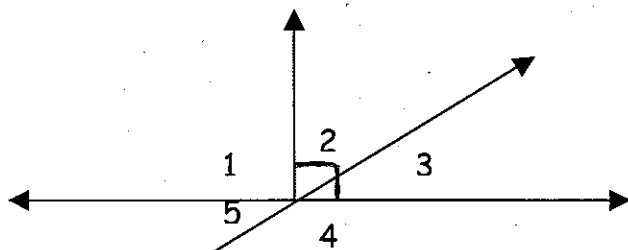
Name Key

1.5 Describe Angle Pair Relationships

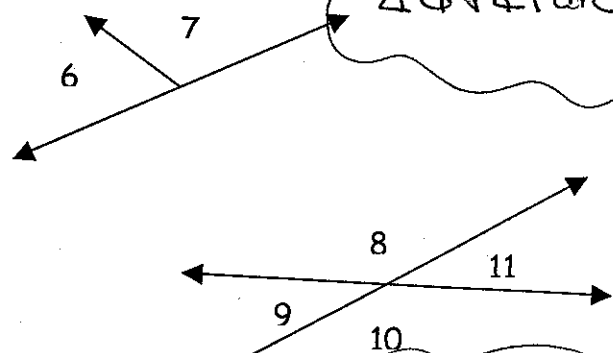
PAIRS OF ANGLES

SPECIAL NAME	DEFINITION	EXAMPLE	RELATIONSHIP
Complementary Angles	Two angles whose measures have a sum of <u>90°</u> . * each angle is the complement of the other		$\angle 1 + \angle 2 = 90^\circ$
Supplementary Angles	Two angles whose measures have a sum of <u>180°</u> . * each angle is the supplement of the other		$\angle 1 + \angle 2 = 180^\circ$
Adjacent Angles	Two angles that have a common <u>vertex</u> and a common <u>side</u> , but have NO common interior points.		Side by side Common <u>border</u>
Linear Pair	Adjacent angles whose non-common sides are opposite rays. (Form a Straight Line)		$\angle 1 + \angle 2 = 180^\circ$
Vertical Angles	Two non-adjacent angles formed by 2 intersecting lines. (sides form 2 pairs of opposite rays)		$\angle 1 = \angle 3$ $\angle 2 = \angle 4$

Use the diagram below to name examples: $\angle 2$ and $\angle 3$ form a right angle.



$\angle 2 + \angle 3$ are complementary
 $\angle 5 + \angle 4$ are a linear pair
 $\angle 3 + \angle 5$ are vertical

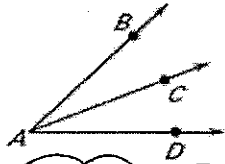


$\angle 6 + \angle 7$ are linear pair

$\angle 8 + \angle 10$ are vertical
 $\angle 8 + \angle 11$ are linear pair
 same for $\angle 9 + \angle 11$

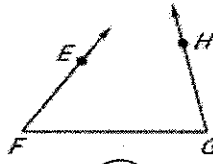
Tell whether the indicated angles are adjacent.

1. $\angle BAC$ and $\angle CAD$



Adjacent

2. $\angle EFG$ and $\angle HGF$



Not Adjacent

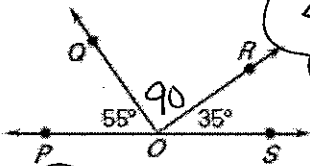
3. $\angle JNM$ and $\angle LNK$



Not Adjacent \rightarrow Vertical

Name a pair of complementary angles and a pair of supplementary angles.

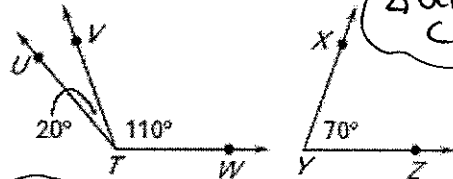
4.



$\angle POQ + \angle QOS$
Supp.

$\angle POQ + \angle ROS$ comp.

5.



$\angle UTV + \angle XYZ$
Comp

$\angle VTK + \angle XYZ$ supp.

$\angle 1$ and $\angle 2$ are complementary angles. Given the measure of $\angle 1$, find $\angle 2$.

6. $\angle 1 = 52^\circ$ $\angle 1 + \angle 2 = 90$
 $52 + \angle 2 = 90$
 $\angle 2 = 38$

7. $\angle 1 = 76^\circ$ $\angle 1 + \angle 2 = 90$
 $76 + \angle 2 = 90$
 $\angle 2 = 14$

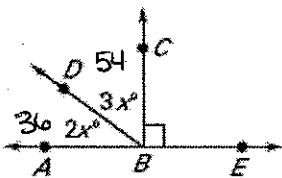
$\angle 1$ and $\angle 2$ are supplementary angles. Given the measure of $\angle 1$, find $\angle 2$.

8. $\angle 1 = 52^\circ$ $\angle 1 + \angle 2 = 180$
 $52 + \angle 2 = 180$
 $\angle 2 = 128$

9. $\angle 1 = 76^\circ$ $\angle 1 + \angle 2 = 180$
 $76 + \angle 2 = 180$
 $\angle 2 = 104$

Find $\angle ABD$ and $\angle DBC$.

10.

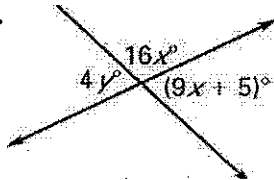


$\angle ABC = 90^\circ$
 $\angle ABD + \angle DBC = 90$
 $2x + 3x = 90$
 $5x = 90$
 $x = 18$

$\angle DBC = 3(18)$
 $\angle DBC = 54^\circ$

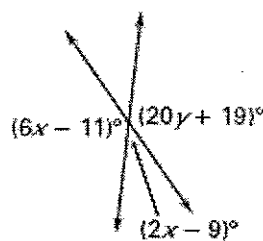
Find the values of x and y.

11.



$4y = 9x + 5$ $16x + 9x + 5 = 180$
 $25x + 5 = 180$
 $25x = 175$
 $x = 7$
 $4y = 9(7) + 5$
 $4y = 63 + 5$
 $4y = 68$
 $y = 17$

12.



$2x - 9 + 6x - 11 = 180$
 $8x - 20 = 180$
 $8x = 200$
 $x = 25$
 $6x - 11 = 20y + 19$
 $6(25) - 11 = 20y + 19$
 $150 - 11 = 20y + 19$
 $139 = 20y + 19$
 $120 = 20y$
 $6 = y$
 $y = 6$