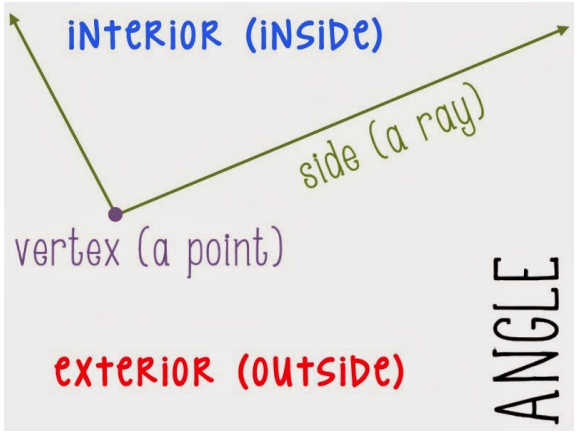
Name_____Period____

Unit 9 Day 1

Angle Relationsh

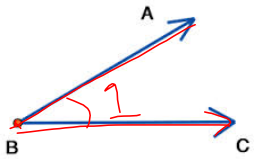


I can Recognize and Calculate Angle Relationships

What is the definition of an angle?

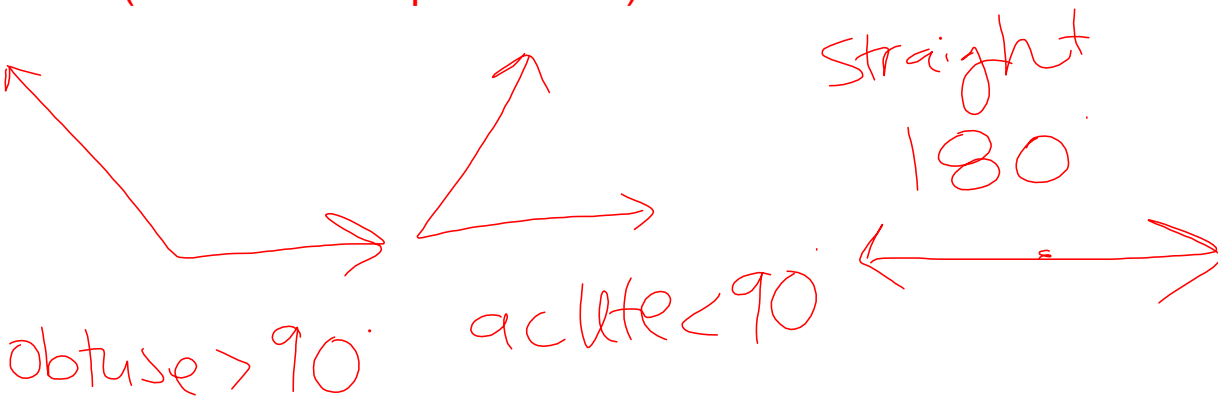
Two rays with a common vertex

How do you name an angle?



∠ABC
∠CBA
∠B ∠1

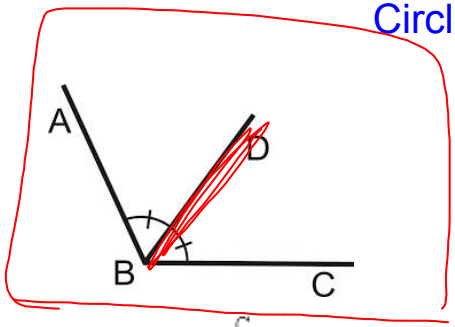
What type of angles are there?
(draw an example of each)

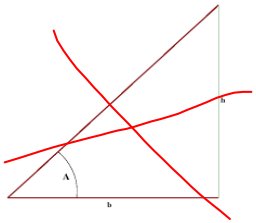


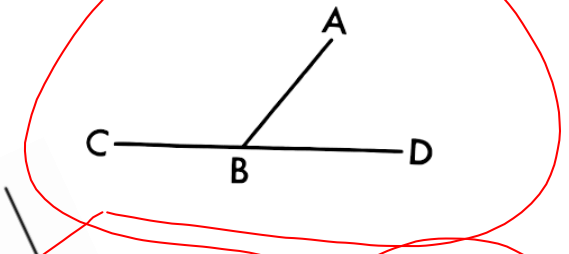
Adjacent Angles:

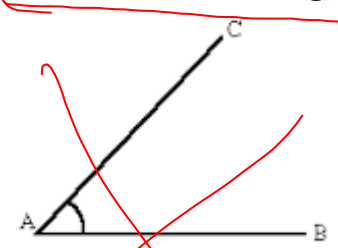
Two angles that are next to each other and have a common ray between them.

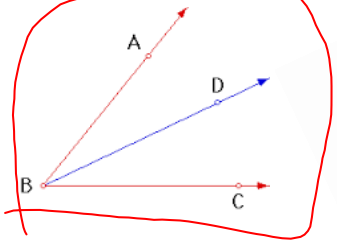
Circle all examples of adjacent angles.

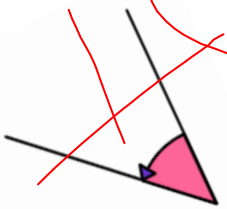


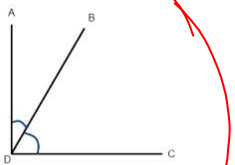


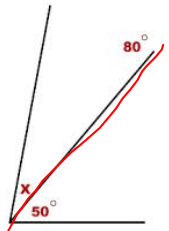


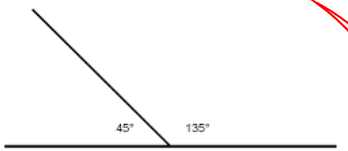






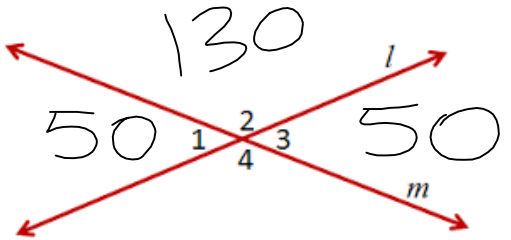






Vertical Angles:

Two angles that are opposite each other when two lines interesect.



Name the pairs of opposite angles.

$\angle 1$ & $\angle 3$ | $\angle 2$ & $\angle 4$

$\angle 1 = \angle 3$ | $\angle 2 = \angle 4$

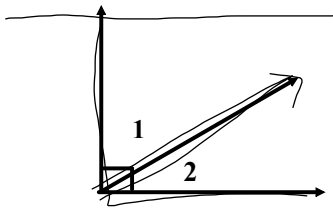
If angle 1 = 50 degrees what are the measurements of the other angles? $\angle 1 = \angle 3 = 50$ $\angle 2 = \angle 4 = 130$

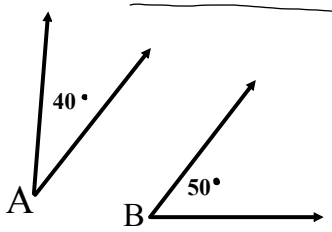
What is the sum of ~~any~~ two adjacent angles? 180°

What is the sum of all 4 angles? 360°

Are all vertical angles congruent?(equal?) Yes

Complementary Angles: Two angles that have a sum of 90°

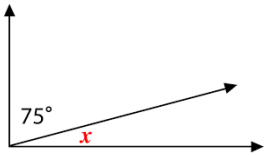




Angles 1 and 2 are complementary angles.

Angles A and B are complementary angles

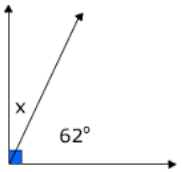
Find the missing angle.



$75 + x = 90$

$-75 \quad -75$

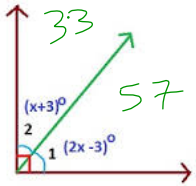
$x = 15$



$62 + x = 90$

$-62 \quad -62$

$x = 28$

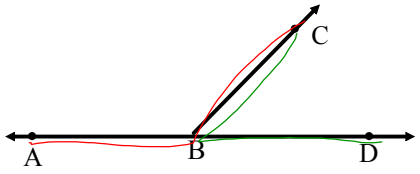


$x + 3 + 2x - 3 = 90$

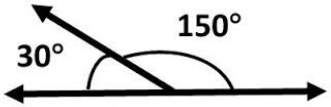
$\frac{3x}{3} = \frac{90}{3}$

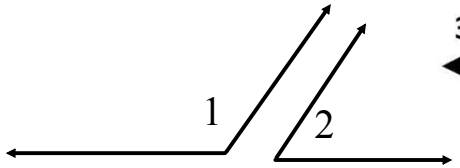
$x = 30$

Supplementary Angles: Two angles that have a sum of 180°



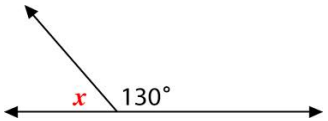
∠ABC and ∠CBD are supplementary



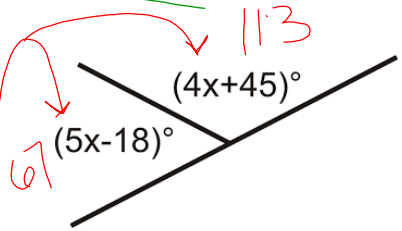


Angles 1 and 2 are supplementary

Find the missing angles.

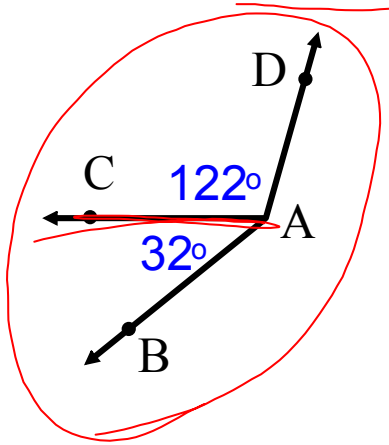


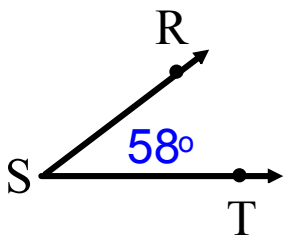
$x + 130 = 180$
$-130 \quad -130$
$x = 50°$

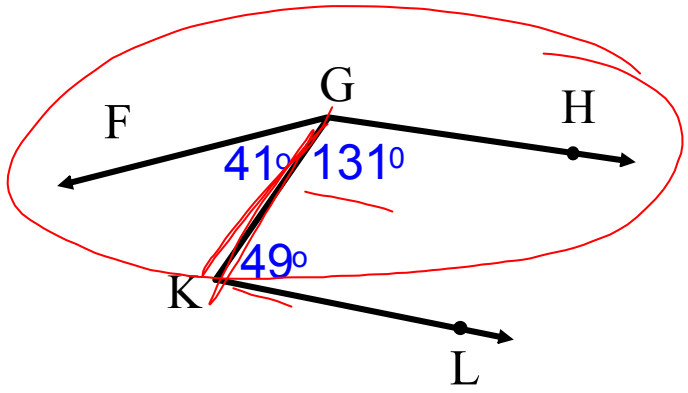


$5x - 18 + 4x + 45 = 180$
$9x + 27 = 180$
$-27 \quad -27$
$9x = 153$
$x = 17$

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







1. Given that ∠1 is a complement of ∠2 and ∠1=68°, find $m\angle 2$.

90

$m\angle 2 = 90 - 68 = 22°$

2. Given that ∠ 3 is a supplement of ∠4 and ∠4=56°, find $m\angle 3$.

180

$m\angle 3 = 180 - 56 = 124$

90

3. ∠1 and ∠2 are complementary angles. Find the measures of the angles if ∠1 = 4x-2 and ∠ 2 = 9x+1.

$4x-2+9x+1 = 90$

$13x-1 = 90$

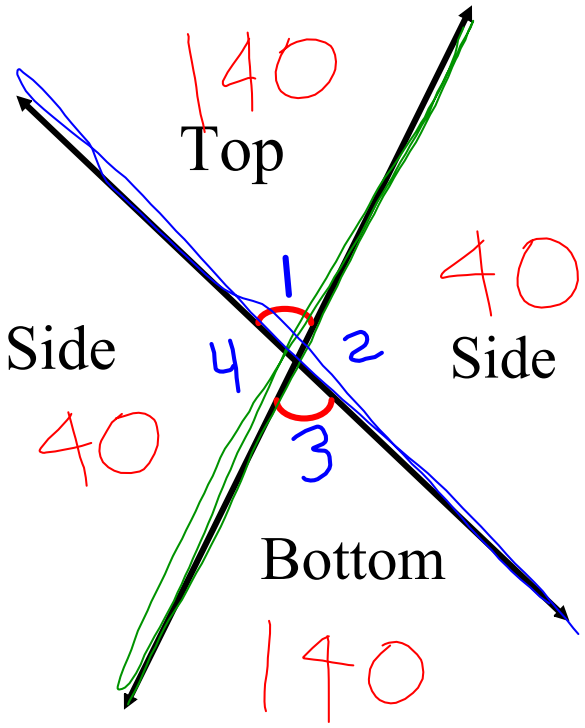
$13x = 91$

$x = 7$

26

64

Linear Pair: Two angles that are adjacent and supplementary.

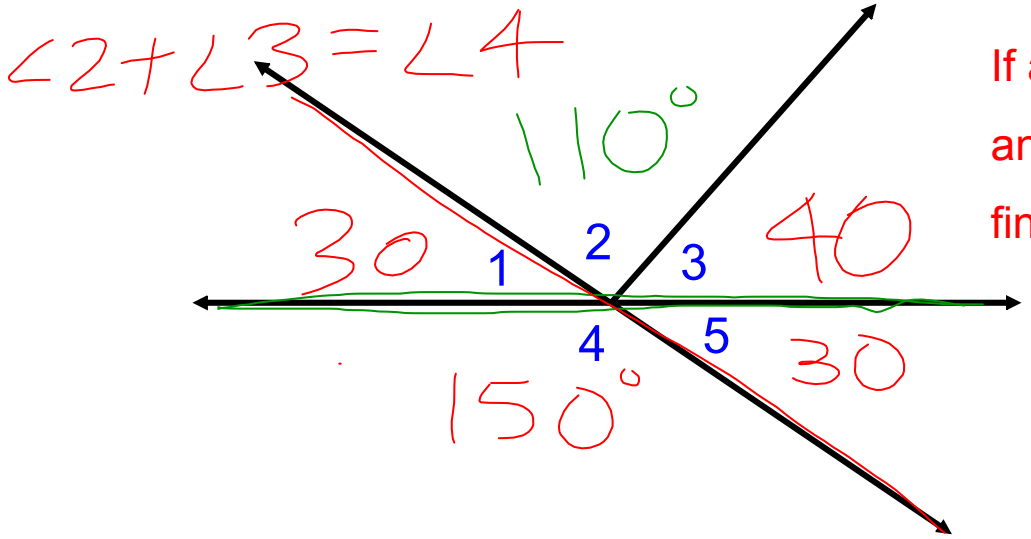


If angle 2 is 40 degrees, what are the others?

Name all of the linear pairs, and all of the vertical angles.

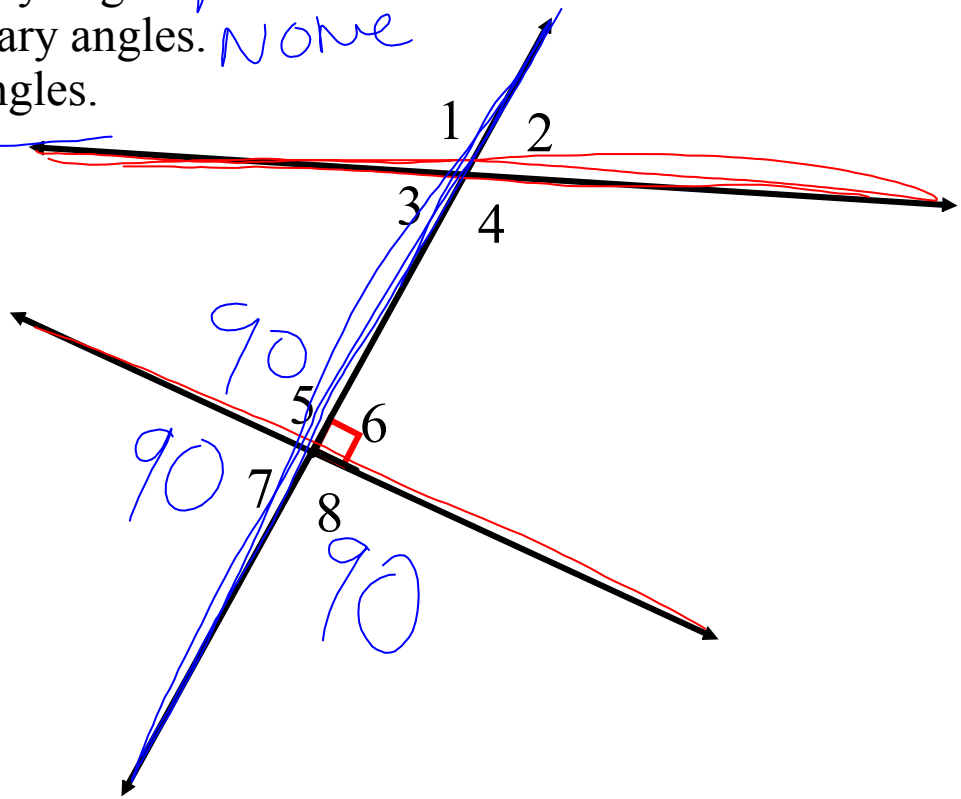
∠1 + ∠4 & ∠4 + ∠5

∠1 = ∠5

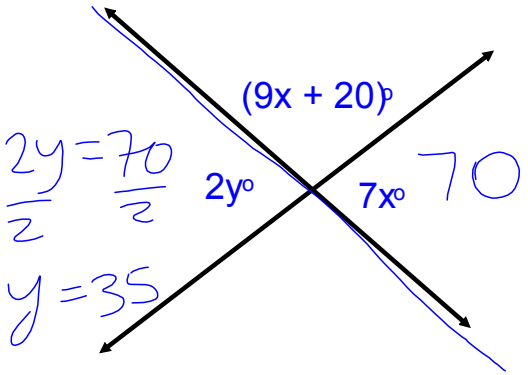


If angle 1 is 30 degrees and angle 3 is 40 degrees, find all the others.

Name a pair of vertical angles.
Name a linear pair.
Name a pair of supplementary angles.
Name a pair of complementary angles. NONE
Name a pair of congruent angles.



Find the value of x and y.



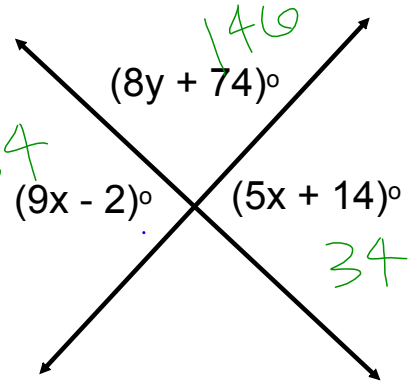
$\frac{2y}{2} = \frac{70}{2}$

$y = 35$

$9x + 20 + 7x = 180$

$16x = 160$

$x = 10$



$9x - 2 = 5x + 14$

$-5x + 2 \quad -5x + 2$

$4x = 16$

$x = 4$

$8y + 74 = 146$

$-74 \quad -74$

$8y = 72$

$y = 9$