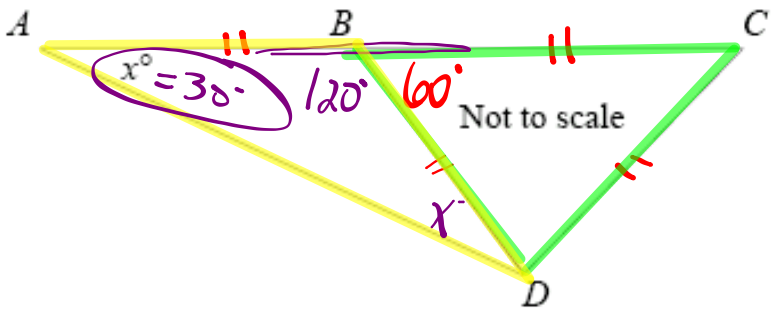
Warm Up...

ACD is a triangle and point B lies on side AC such that $AB = BD = BC = CD$

Find angle BAD ($x°$):

$$\frac{180° - 120°}{2}$$



HW questions...

Notes - Geometry Theorems.doc

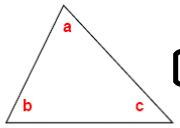
*** Now that the notes are taken care of...

let's do some examples to UNDERSTAND these BIG ideas!!!

Geometry Theorems...

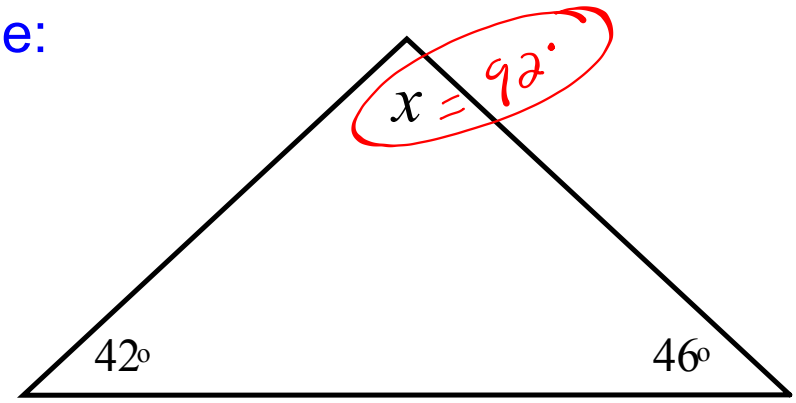
Triangle Angle Sum Theorem:

The sum of the interior angles of any triangle is 180°.



$a + b + c = 180°$

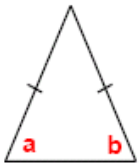
Example:



Isosceles Triangle Theorem:

In an isosceles triangle, the base angles are equal.

The two angles that are opposite to the equal sides.

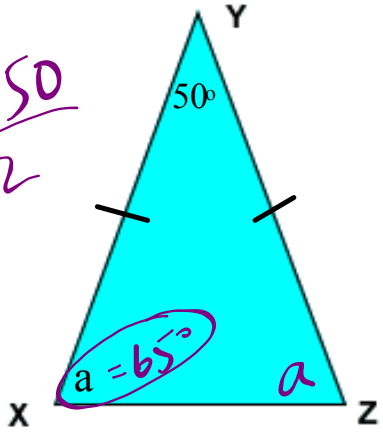


a = b

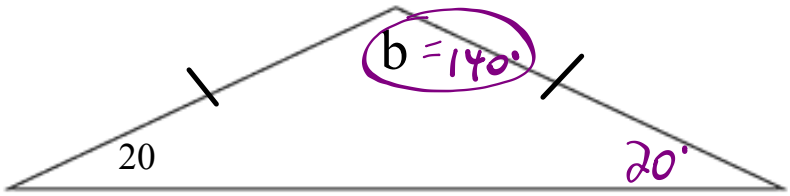
EXAMPLES...

1)

$\frac{180 - 50}{2}$



2)

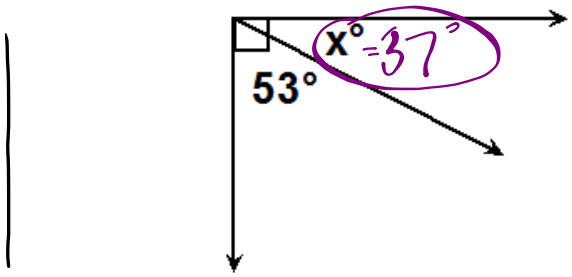


- **Complementary Angles:**
  Two or more angles that have a sum of 90°.

Examples:

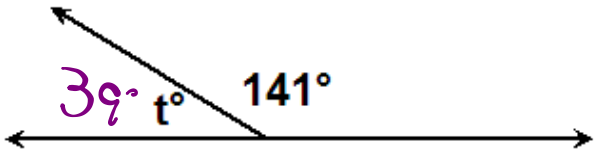
(1) What is the complement of a 50 angle? 40°

(2) Determine the measure of the missing angle.



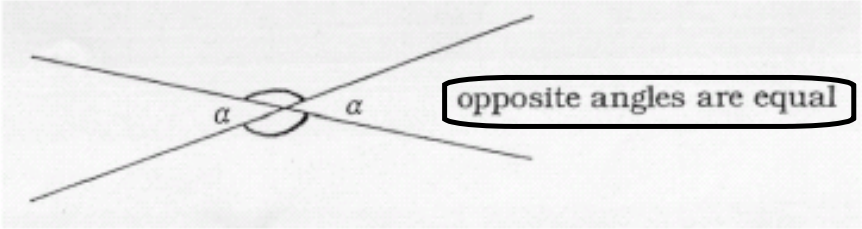
- **Supplementary Angles**:
  Two or more angles that have a sum of 180°.

Examples:



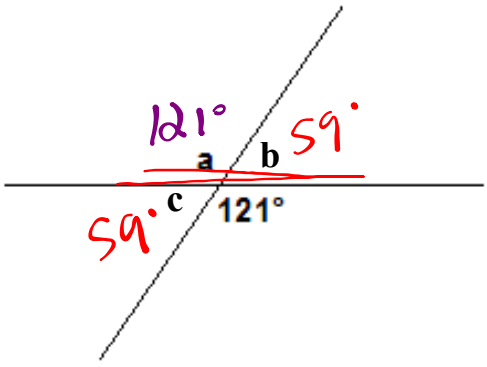
Opposite Angle Theorem...

When 2 straight lines cross, 2 pairs of opposite angles are formed. Opposite angles are equal in size



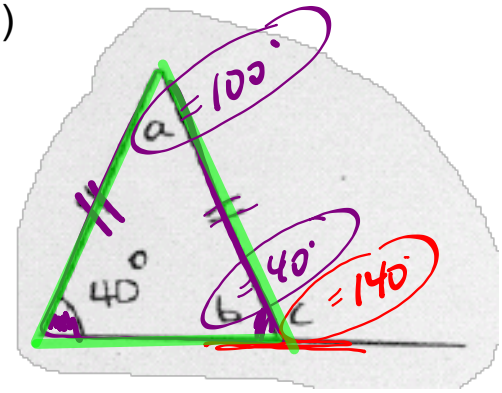
In geometry, angles or lines marked with the same symbol are the same size.

Example:

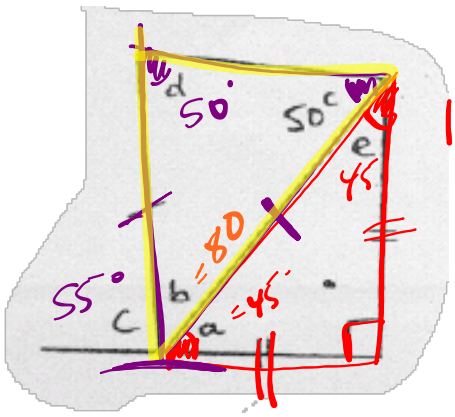


EXERCISE: Use geometry theroems to determine the measure of missing angles...

1)

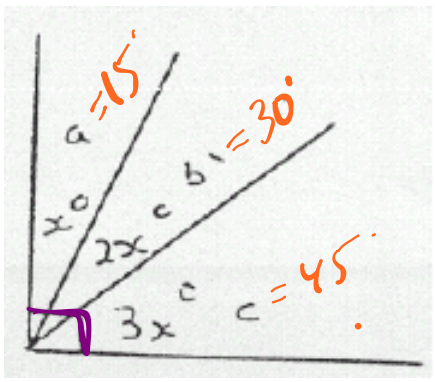


2)

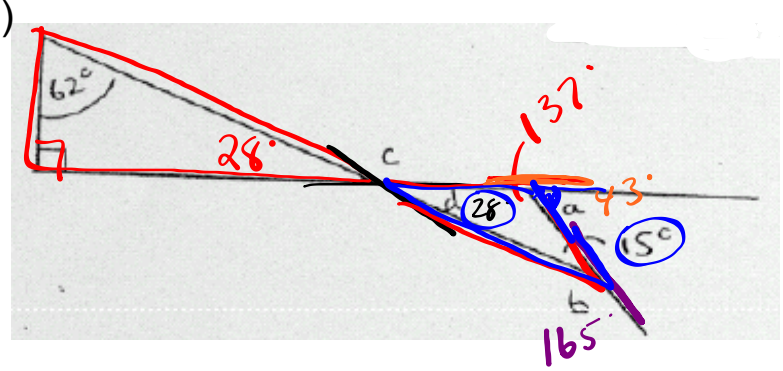


180 − 90 / 2

3)



4)



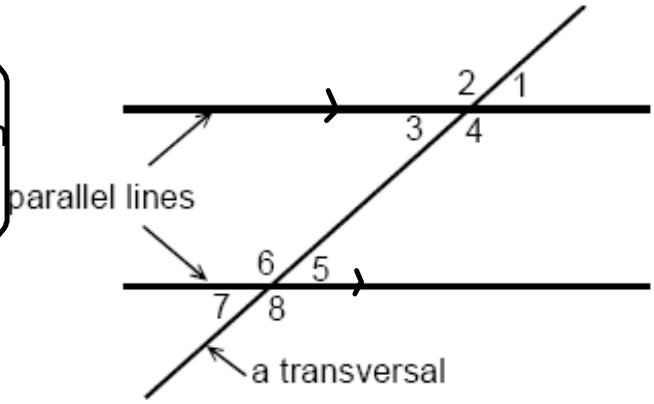
$x + 2x + 3x = 90$

$\frac{6x}{6} = \frac{90}{6}$

$x = 15$

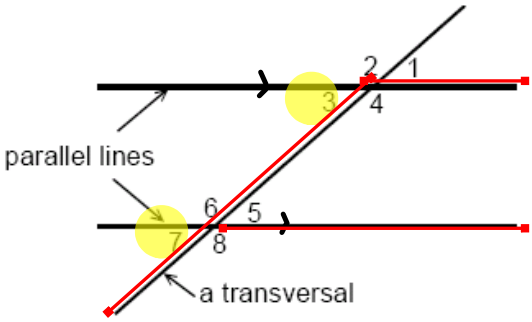
Parallel Line Theorems

A **transversal** is a third line that crosses two or more lines, as shown in the illustration to the right.



Corresponding Angles:

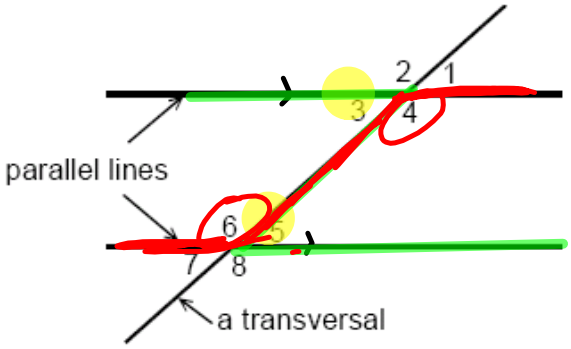
Pairs of angles on the same side of a transversal and the same side of the parallel lines



CORRESPONDING ANGLES ARE EQUAL

Alternate Interior Angles:

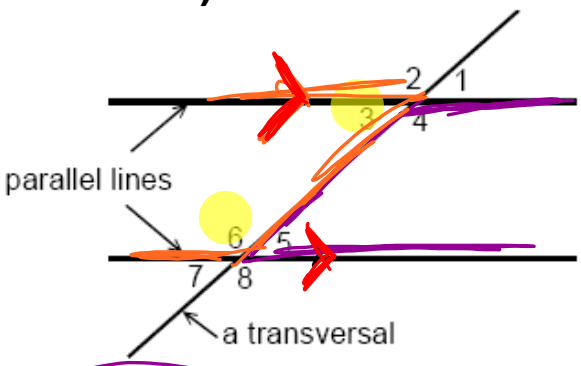
Pairs of angles on the opposite sides of a transversal and between the parallel lines



ALTERNATE INTERIOR ANGLES ARE EQUAL

Co-Interior Angles (Same-side Interior):

Pairs of angles on the same side of a transversal and between the parallel lines



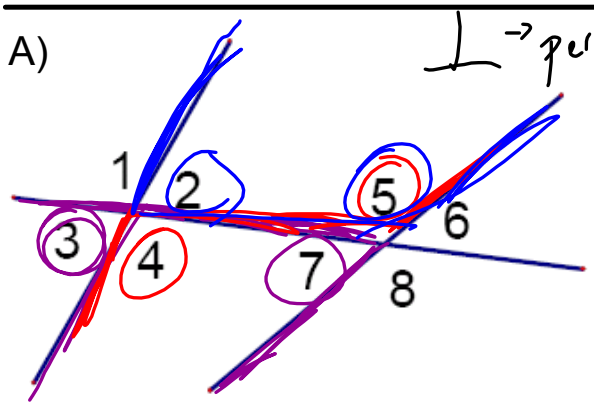
CO-INTERIOR ANGLES ARE SUPPLEMENTARY

EXERCISE: Practice...

∠ → angle

⊥ → perpendicular // → parallel

A)



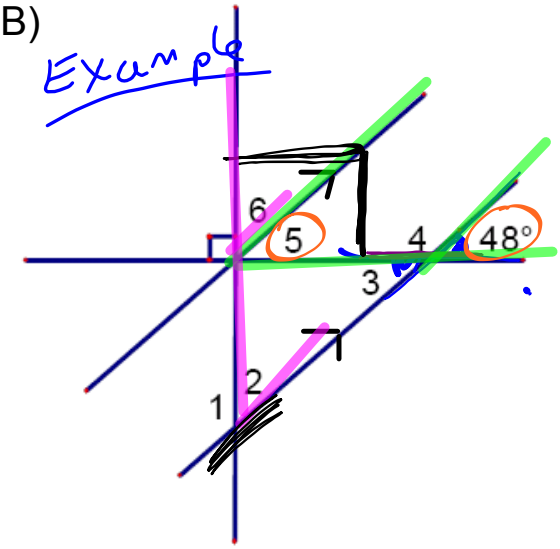
F 1. <3 and <__7__ are corresponding angles.

Z 2. <4 and <__5__ are alternate interior angles.

C 3. <5 and <__2__ are same-side interior (co-interior) angles.

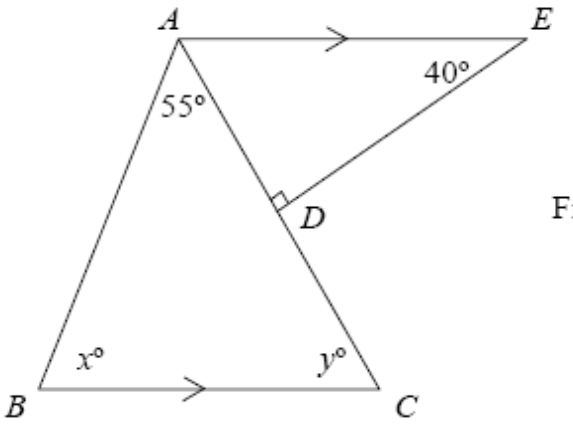
B)

Example



1. m<1 = __138°__
2. m<2 = __42°__
3. m<3 = __48°__
4. m<4 = __132°__
5. m<5 = __48°__
6. m<6 = __42°__

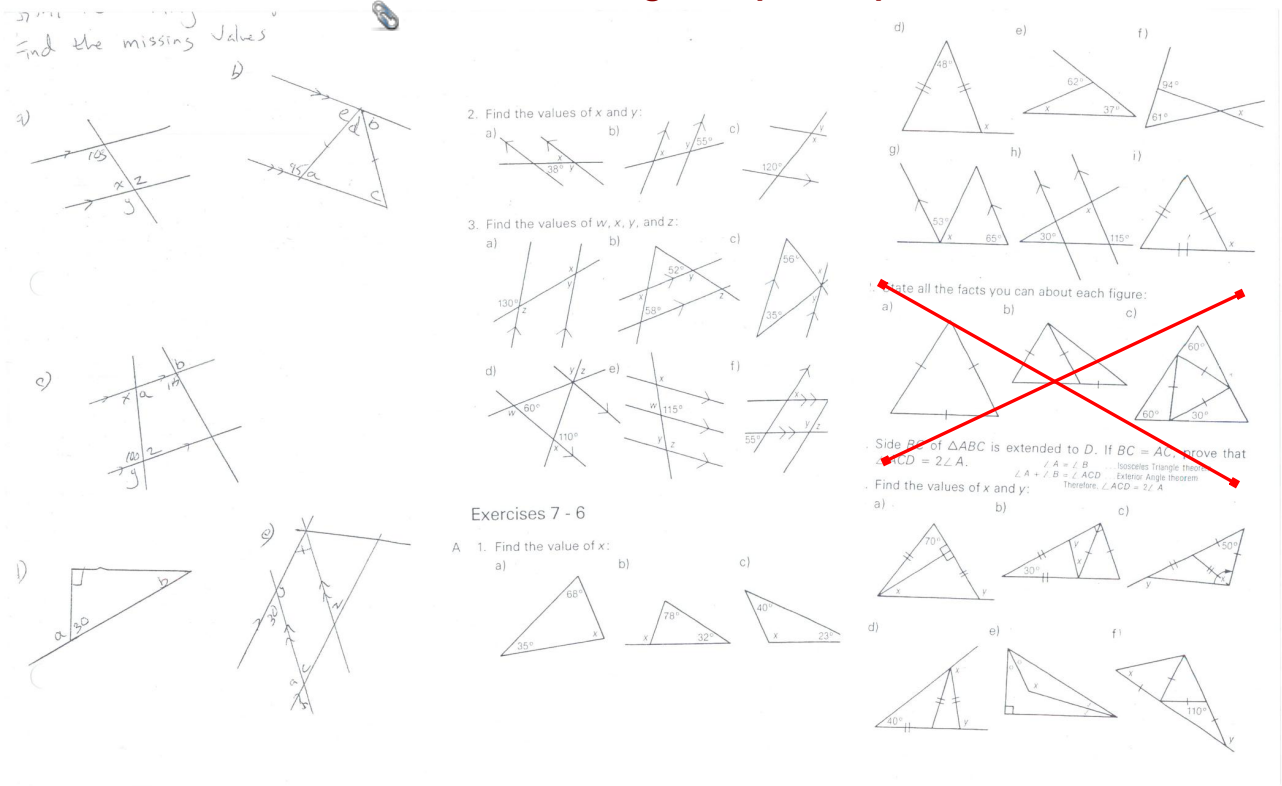
C)



Find $x°$ and $y°$.

HW: Complete the following...

Worksheet - Angle Properties.pdf



Attachments

Notes - Geometry Theorems.doc

Worksheet - Angle Properties.pdf