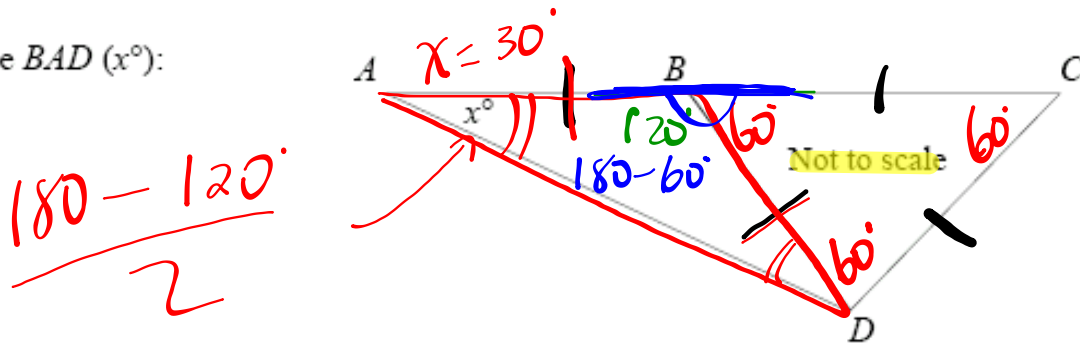


Warm Up...

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

Find angle BAD (x°):



Homework Questions...

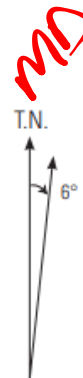
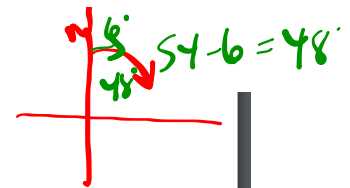
7. Magnetic declination is the difference between true north (the direction to the North Pole) and magnetic north (the direction a compass needle actually points towards). A park ranger is using a compass that cannot be adjusted for magnetic declination. From the starting point on her map, she must walk at a true bearing of 54° , then at a true bearing of 195° , and finally in that a true bearing of 107° .

The magnetic declination on her map is 6° east of true north.

The park ranger wants to convert the true bearings on her route (which are based on true north) to the compass readings she will read from her compass.

- $48^\circ, 189^\circ, 101^\circ$
- ✓ a) How should the park ranger calculate the compass readings?
 - ✓ b) What compass reading should she use for each true bearing?

To visualize the park ranger's route, draw a rough map showing the three bearing directions.



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

Notes - Geometry Theorems.doc



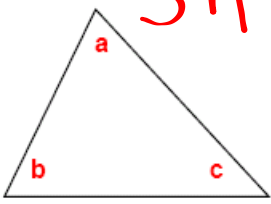
let's do some examples to UNDERSTAND these **BIG** ideas!!!

Geometry Theorems...

Triangle Angle Sum Theorem:

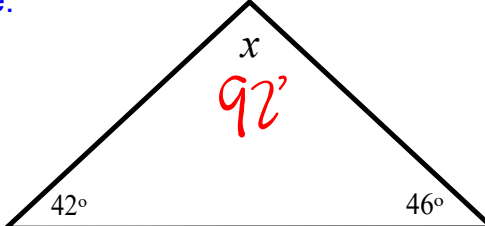
The sum of the interior angles of any triangle is 180° .

SATT



$a + b + c = 180^\circ$

Example:



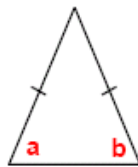
$x = 92^\circ$

180
 $- 42$
 $- 46$

Isosceles Triangle Theorem:

In an isosceles triangle, the base angles are equal.

The two angles that are opposite to the equal sides.

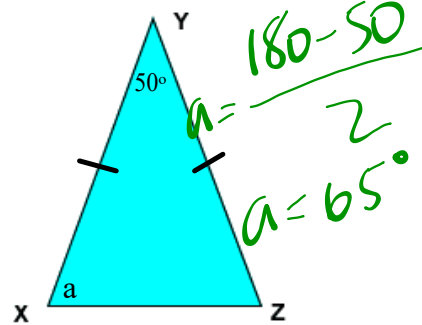


$a = b$

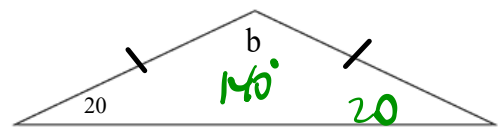
I T T

EXAMPLES...

1)



2)

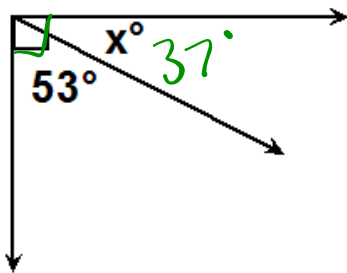


- **Complementary Angles:** *CAT*
Two or more angles that have a sum of 90° .

Examples:

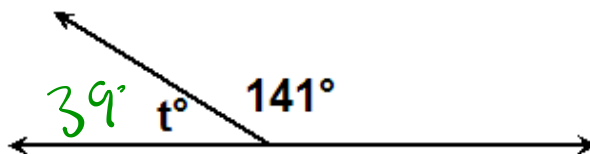
(1) What is the complement of a 50° angle? *40°*

(2) Determine the measure of the missing angle.



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

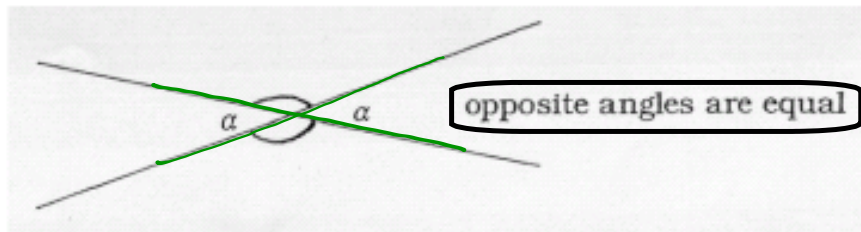
Examples:



Opposite Angle Theorem...

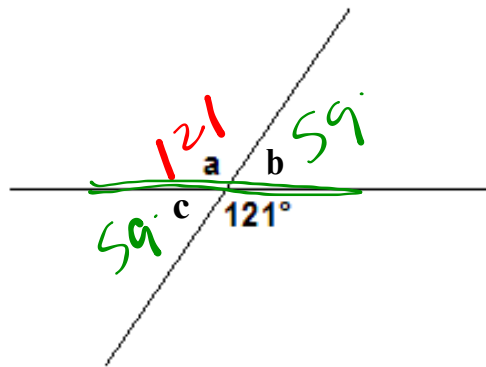
DAT

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

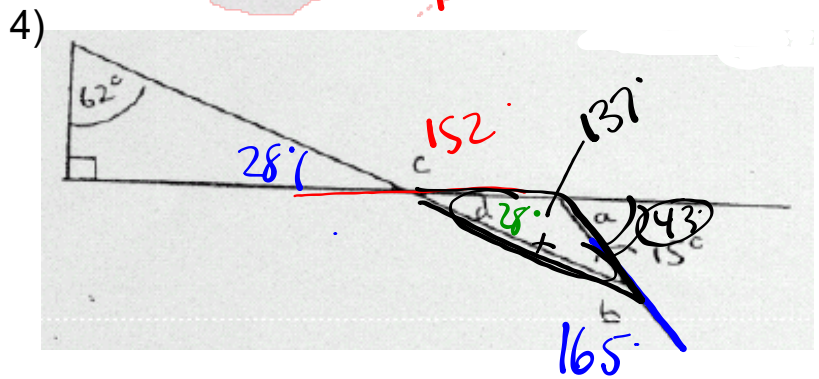
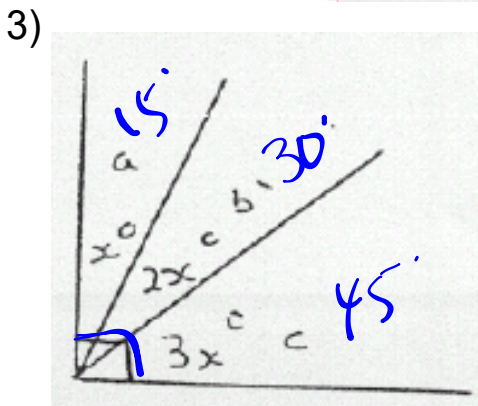
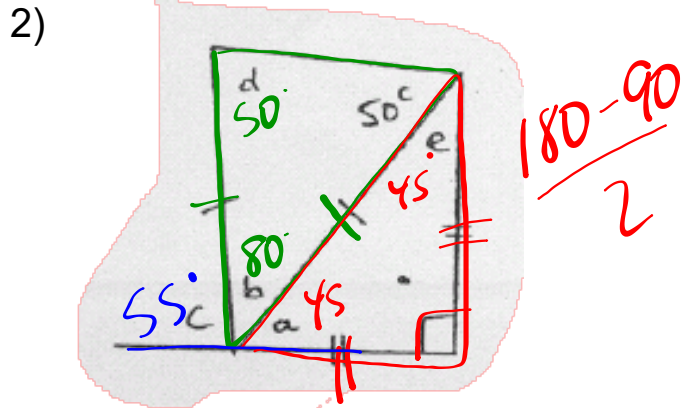
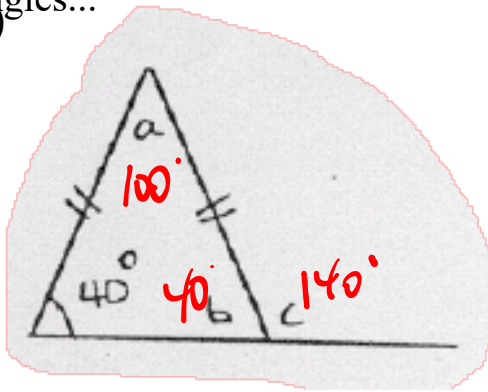


In geometry, angles or lines marked with the same symbol are the same size.

Example:



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

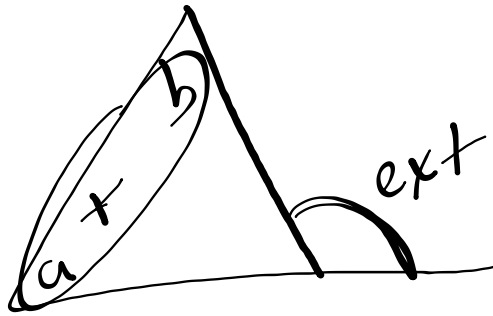


$$x + 2x + 3x = 90$$

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

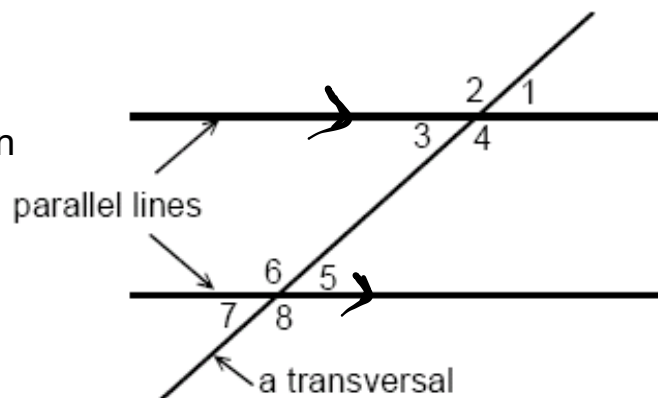
$$x = 15$$

//



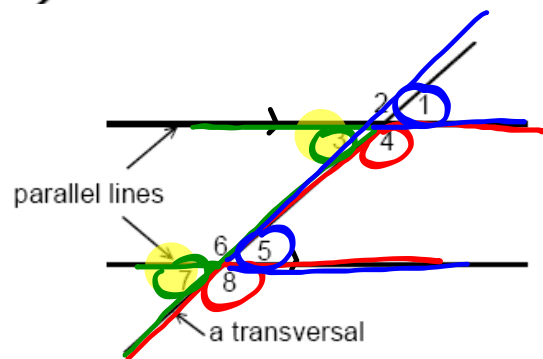
Parallel Line Theorems

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

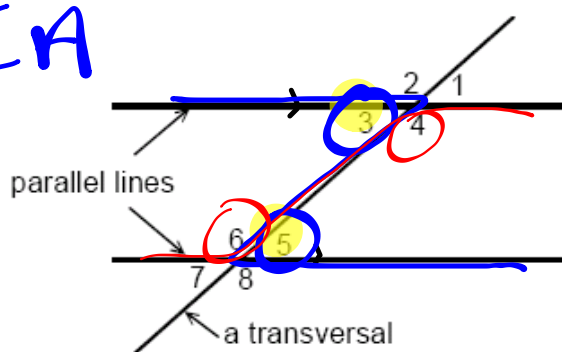


CORRESPONDING ANGLES ARE EQUAL

CA

Alternate Interior Angles: AIA

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

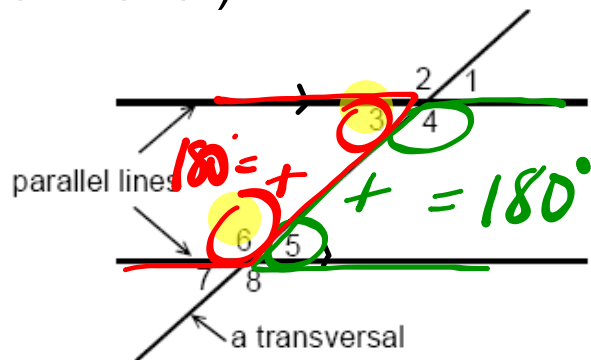


ALTERNATE INTERIOR ANGLES ARE EQUAL

Co-Interior Angles (Same-side Interior):

CIA

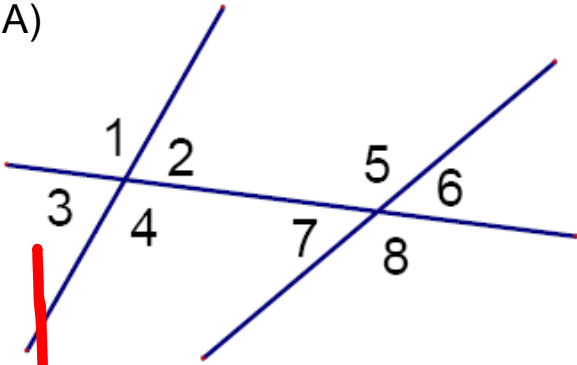
Pairs of angles on the same side of a transversal and between the parallel lines



CO-INTERIOR ANGLES ARE SUPPLEMENTARY

EXERCISE: Practice...

A)



1. $\angle 3$ and $\angle \underline{\quad}$ are corresponding angles.
2. $\angle 4$ and $\angle \underline{\quad}$ are alternate interior angles.
3. $\angle 5$ and $\angle \underline{\quad}$ are same-side interior angles.

B)



1. $m\angle 1 = \underline{138^\circ}$
2. $m\angle 2 = \underline{42^\circ}$
3. $m\angle 3 = \underline{48^\circ}$
4. $m\angle 4 = \underline{132^\circ}$
5. $m\angle 5 = \underline{48^\circ}$
6. $m\angle 6 = \underline{42^\circ}$

↑ ↑
measure \angle angle

Attachments

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