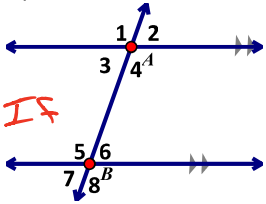


Transversals – Properties of Parallel Lines

Notes Section 3.2

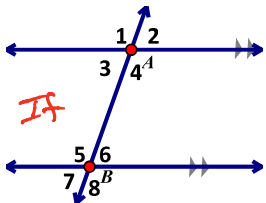
Name _____

Corresponding Angles Postulate – If two parallel lines are cut by a transversal, then corresponding angles are congruent.



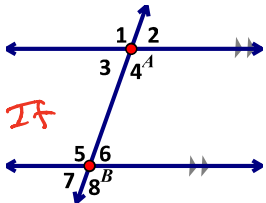
IF $\angle 1 \cong \angle 5$
 $\angle 2 \cong \angle 6$
 $\angle 3 \cong \angle 7$
 $\angle 4 \cong \angle 8$

Alternate Interior Angles Theorem – If two parallel lines are cut by a transversal, then alternate interior angles are congruent.



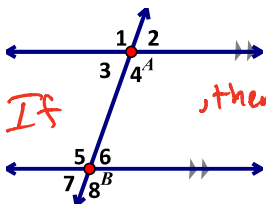
IF $\angle 3 \cong \angle 6$
 $\angle 4 \cong \angle 5$

Alternate Exterior Angles Theorem – If two parallel lines are cut by a transversal, then alternate exterior angles are congruent.



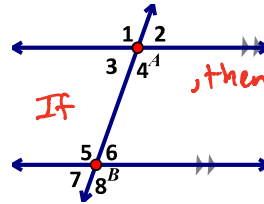
IF $\angle 1 \cong \angle 8$
 $\angle 2 \cong \angle 7$

Consecutive Interior Angles Theorem – If two parallel lines are cut by a transversal, then consecutive interior angles are supplementary.



IF $\angle 3 \text{ \& } \angle 5$ are Supplementary
 $\angle 4 \text{ \& } \angle 6$ are Supplementary

Consecutive Exterior Angles Theorems – If two parallel lines are cut by a transversal, then consecutive exterior angles are supplementary.



IF $\angle 1 \text{ \& } \angle 8$ are Supplementary
 $\angle 2 \text{ \& } \angle 7$ are Supplementary

Fill in the chart with the angle relationships that we have just learned.

CONGRUENT
Alt Int \angle s
Alt Ext \angle s
Corresponding \angle s

SUPPLEMENTARY
Consecutive Int \angle s
Consecutive Ext \angle s

The above chart is only true if the transversal cuts

2 parallel lines

Transversals – Properties of Parallel Lines

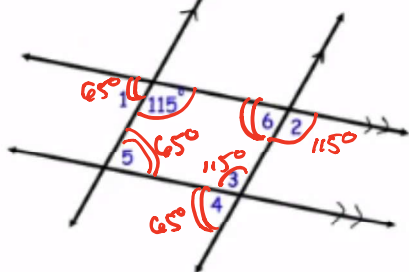
Notes Section 3.2

Name _____

Ex 1: Find the measure of each angle and give a reason for knowing it.

$m\angle 2 = 115^\circ$ Corr. Ls post. ($115^\circ, \angle 2$)

$m\angle 3 = 115^\circ$ Corr Ls post ($\angle 2, \angle 3$)



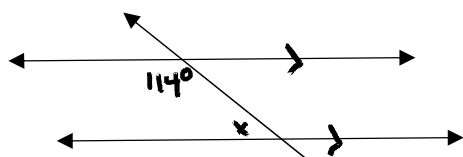
$m\angle 1 = 65^\circ$ Supplement post. ($\angle 1, 115^\circ$)

$m\angle 5 = 65^\circ$ Alt. INT Ls Thm ($\angle 1, \angle 5$)

$m\angle 6 = 65^\circ$ Corr Ls post ($\angle 1, \angle 6$)

$m\angle 4 = 65^\circ$ Alt INT Ls Thm ($\angle 4, \angle 5$)

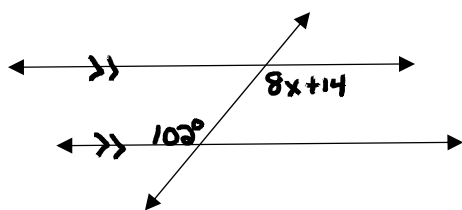
Ex 2: Solve for x.



$x + 114^\circ = 180^\circ$

$x = 66^\circ$

Ex 3: Solve for x.

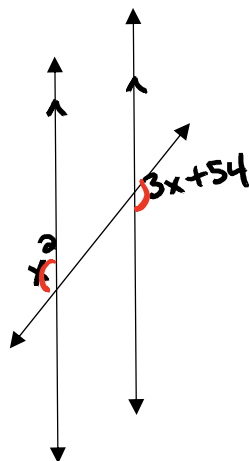


$102 = 8x + 14$

$88 = 8x$

$11 = x$

Ex 4: Solve for x.



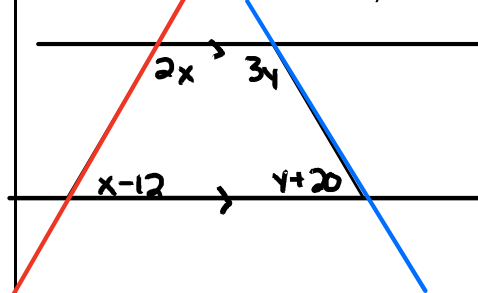
$x^2 = 3x + 54$

$x^2 - 3x - 54 = 0$

$(x-9)(x+6) = 0$

$x-9=0$ } $x+6=0$
 $x=9$ } $x=-6$

Ex 5: Find the value of x and y.



$(2x) + (x-12) = 180^\circ$

$3x - 12 = 180^\circ$

$x - 4 = 60^\circ$

$x = 64$

$(3y) + (y+20) = 180$

$4y + 20 = 180$

$4y = 160$

$y = 40$