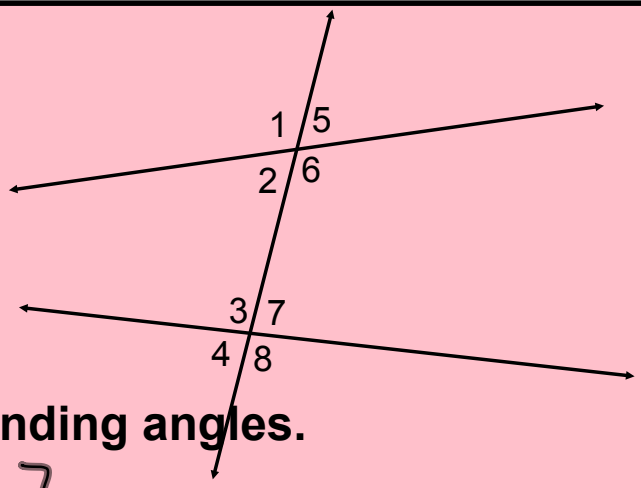
Bellwork
09/27/2011



1. Name the pairs of corresponding angles.

∠1 & ∠3 ∠5 & ∠7

∠2 & ∠4 ∠6 & ∠8

2. Name the pairs of alternate interior angles.

∠6 & ∠3

∠2 & ∠7

3. Name the pairs of consecutive interior angles.

∠2 & ∠3 ∠6 & ∠7

Geometry
3.2 Use Parallel Lines and Transversals
Standard(s): 3,7

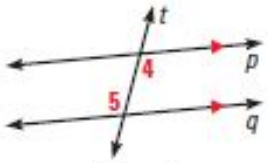
Vocabulary:

THEOREMS *For Your Notebook*

THEOREM 3.1 Alternate Interior Angles Theorem

If two parallel lines are cut by a transversal, then the pairs of alternate interior angles are congruent.

Proof: Example 3, p. 156

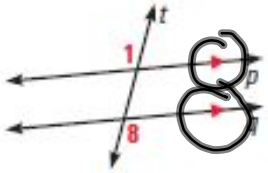


$\angle 4 = \angle 5$

THEOREM 3.2 Alternate Exterior Angles Theorem

If two parallel lines are cut by a transversal, then the pairs of alternate exterior angles are congruent.

Proof: Ex. 37, p. 159

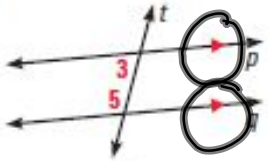


$\angle 1 = \angle 8$

THEOREM 3.3 Consecutive Interior Angles Theorem

If two parallel lines are cut by a transversal, then the pairs of consecutive interior angles are supplementary.

Proof: Ex. 41, p. 159

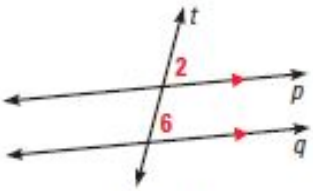


$\angle 3$ and $\angle 5$ are supplementary.

POSTULATE *For Your Notebook*

POSTULATE 15 Corresponding Angles Postulate

If two parallel lines are cut by a transversal, then the pairs of corresponding angles are congruent.



$\angle 2 = \angle 6$

Identify Angle Measures

Find the measure of all the missing angles.

$m\angle 1 =$ 125°

$m\angle 3 =$ 55°

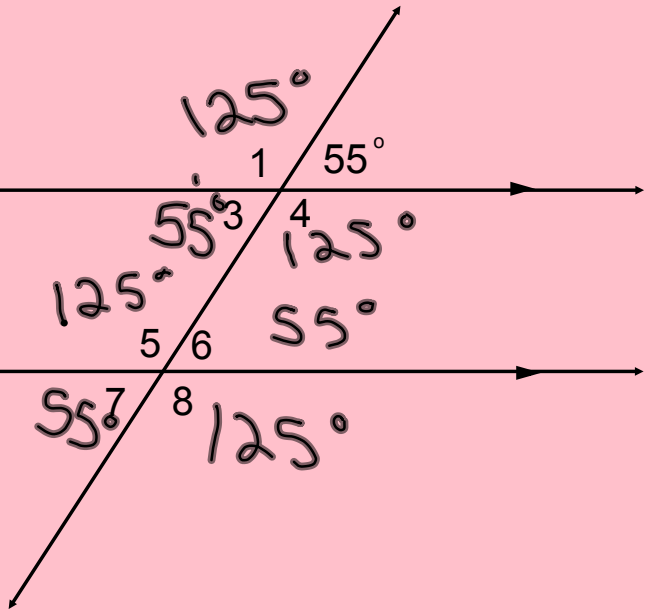
$m\angle 4 =$ 125°

$m\angle 5 =$ 125°

$m\angle 6 =$ 55°

$m\angle 7 =$ 55°

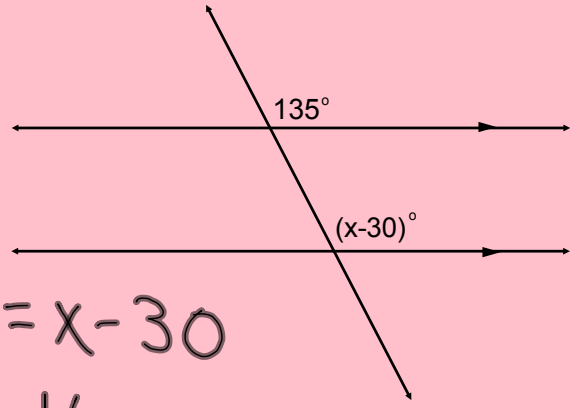
$m\angle 8 =$ 125°



Use Properties of Parallel Lines

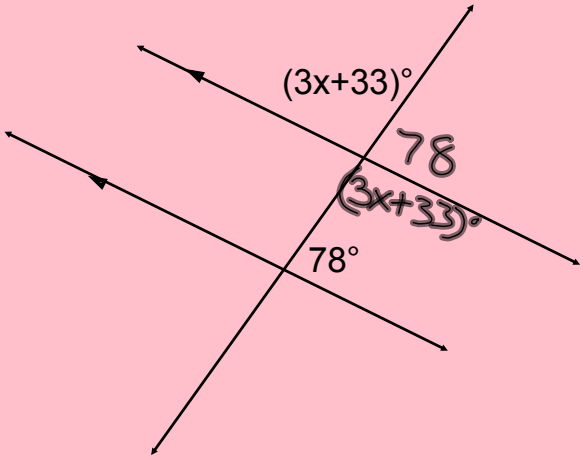
Find the value of x.

Corresponding ∠'s



$135 = x - 30$

$x = 165$



$3x + 33 + 78 = 180$

$3x + 111 = 180$

$-111 \quad -111$

$3x = 69$

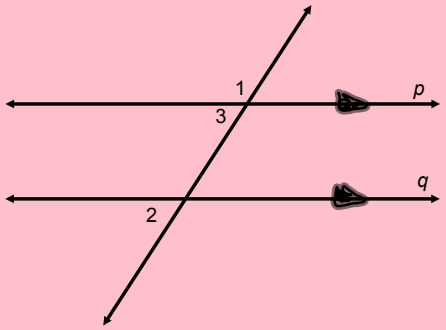
$x = 23$

Prove Using Corresponding Angle Relationships

Prove that if two parallel lines are cut by a transversal, then the exterior angles on the same side of the transversal are supplementary.

Given: *p*||*q*

Prove: ∠1 and ∠2 are supplementary



Statements	Reasons
1. p ∥ q	1. Given
2. ∠3 ≅ ∠2	2. Corresponding ∠'s Post.
3. m∠1 + m∠3 = 180°	3. Def. of Supplementary ∠'s
4. m∠3 = m∠2	4. Def. of ≅ ∠'s
5. m∠1 + m∠2 = 180°	5. Substitution Prop. of =
6. ∠1 & ∠2 are Supplementary	6. Def. of supplementary ∠'s

Homework Assignment

Worksheet 3.2B