Questions on lesson 2.3?

Look over Lesson 2.3's homework, we will be taking our content mastery quiz soon!

Feb 27-8:47 AM

Content Mastery Quiz #7 - Lesson 2.3

Show ALL work to receive full points

Name the property (addition property of equality, subtraction property of equality, reflexive property, substitution property, transitive property) that is illustrated below.

1) $m\angle 2 = m\angle 2$

2) If $5 + x = y$ and $y = 3$, then $5 + x = 3$

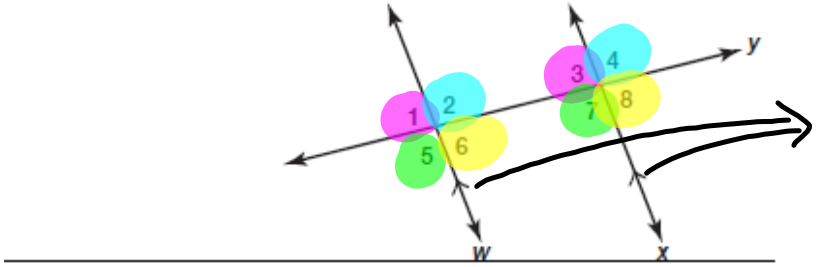
*Quiz questions on B3's notes on website for fixing mistakes to retake quizzes.

Sep 17-9:42 AM

2.4 What's Your Proof?
Angle Postulates and Theorems

PG. 176-7 IN YOUR BOOK

The **Corresponding Angle Postulate** states: "If two parallel lines are intersected by a transversal, then corresponding angles are congruent."



means w||x

1. Name all pairs of angles that are congruent using the Corresponding Angle Postulate.

∠1≅∠3, ∠2≅∠4, ∠5≅∠7, ∠6≅∠8

A **conjecture** is a hypothesis that something is true. The hypothesis can later be proved or disproved.

2. Write a conjecture about each pair of angles formed by parallel lines cut by a transversal. Explain how you made each conjecture.

a. alternate interior angles are ≅

∠3≅∠6, ∠2≅∠7

b. alternate exterior angles are ≅

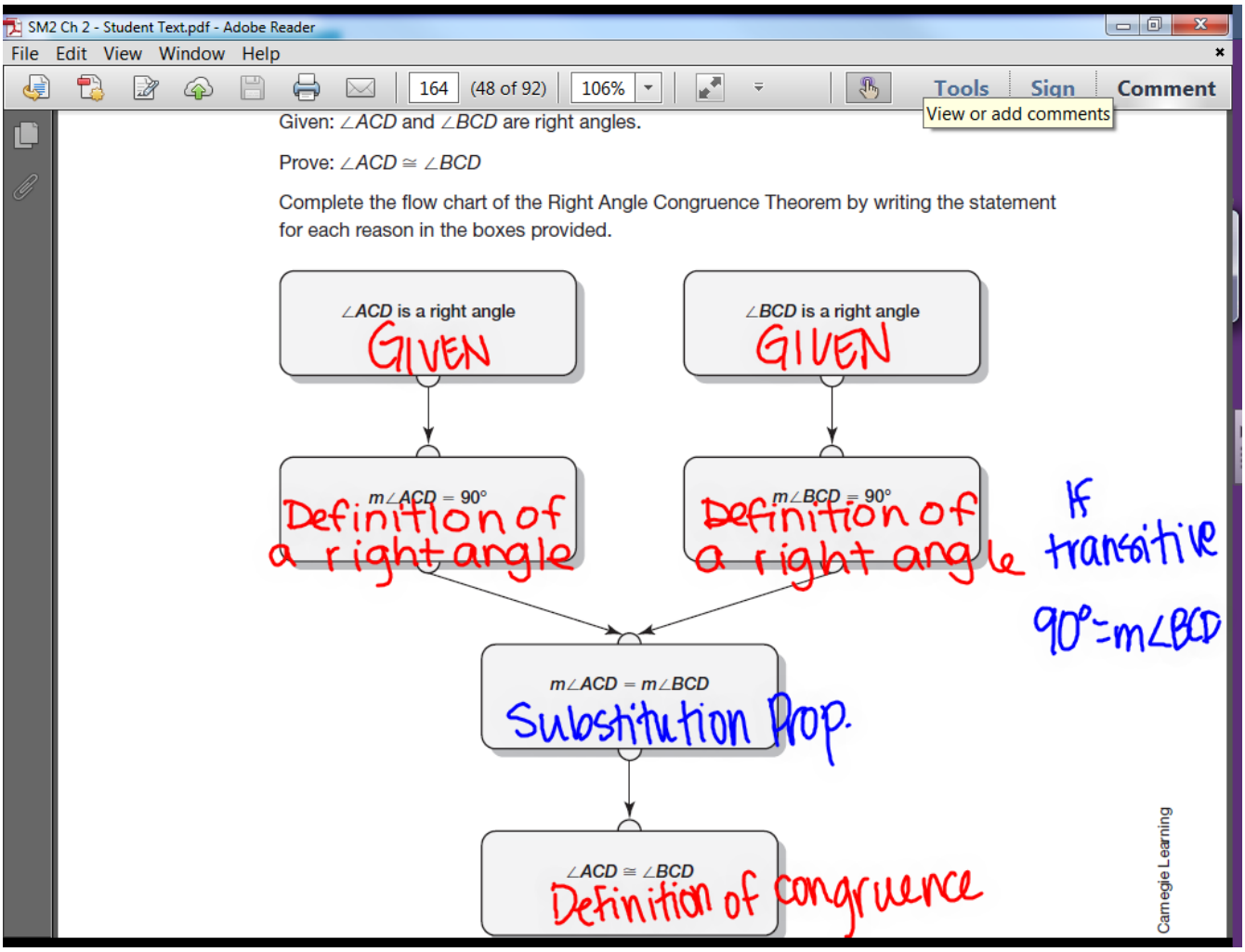
∠1≅∠8, ∠5≅∠4

c. same-side interior angles are supplementary

∠2≅∠3, ∠6≅∠7

d. same-side exterior angles

∠1≅∠4, ∠5≅∠8



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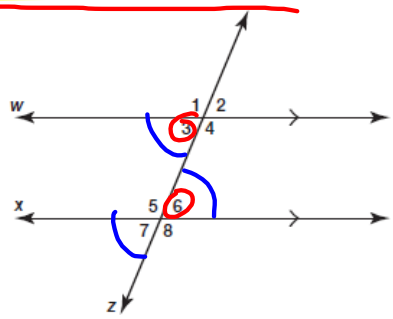
PG. 178-9 IN YOUR BOOK

PROBLEM 2 Conjecture or Theorem?

If you can prove that a conjecture is true, then it becomes a theorem.

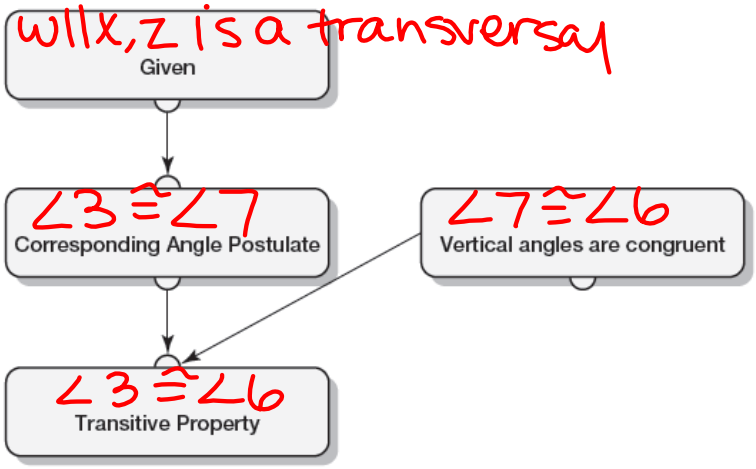
1. The Alternate Interior Angle Conjecture states: "If two parallel lines are intersected by a transversal, then alternate interior angles are congruent."



Given: w||x, z is a transversal
Prove: ∠3≅∠6 or ∠4≅∠6

a. Use the diagram to write the "Given" and "Prove" statements for the Alternate Interior Angle Conjecture.
Given: w||x, z is a transversal
Prove: ∠3≅∠6

b. Complete the flow chart proof of the Alternate Interior Angle Conjecture by writing the reason for each statement in the boxes provided.



c. Create a two-column proof of the Alternate Interior Angle Theorem.

Statements	Reasons
1. w||x, z is a transversal	1. Given
2. ∠3≅∠7	2. Corresponding ∠ Post.
3. ∠7≅∠6	3. Vertical ∠s are ≅
4. ∠3≅∠6	4. Transitive Prop.

You have just proven the Alternate Interior Angle Conjecture.
It is now known as the **Alternate Interior Angle Theorem.**

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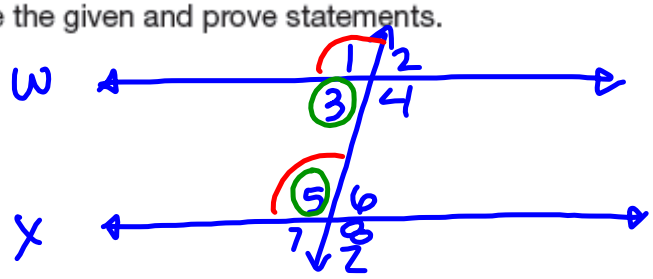
PG. 181 IN YOUR BOOK

3. The Same-Side Interior Angle Conjecture states: "If two parallel lines are intersected by a transversal, then interior angles on the same side of the transversal are supplementary."

   a. Draw and label a diagram illustrating the Same-Side Interior Angle Conjecture. Then, write the given and prove statements.



   b. Prove the Same-Side Interior Angle Conjecture.

Statements	Reasons
1. w∥x, z is a transversal	1. Given
2. ∠1 and ∠3 are a linear pair	2. Definition of a linear pair
3. ∠1 and ∠3 are supplementary	3. Linear Pair Post.
4. m∠1 + m∠3 = 180°	4. Definition of supplementary
5. ∠1 ≅ ∠5	5. Corresponding ∠ Post.
6. m∠1 = m∠5	6. Definition of ≅
7. m∠3 + m∠5 = 180°	7. Substitution Prop.
8. ∠5 & ∠3 are supplementary ∠s	8. Definition of supplementary ∠s.

You have just proven the Same-Side Interior Angle Conjecture. It is now known as the **Same-Side Interior Angle Theorem**.

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PG. 184 IN YOUR BOOK

If two parallel lines are intersected by a transversal, then:

- corresponding angles are congruent.
- alternate interior angles are congruent.
- alternate exterior angles are congruent.
- same-side interior angles are supplementary.
- same-side exterior angles are supplementary.

Each of these relationships is represented by a postulate or theorem.

- **Corresponding Angle Postulate**: If two parallel lines are intersected by a transversal, then corresponding angles are congruent.
- **Alternate Interior Angle Theorem**: If two parallel lines are intersected by a transversal, then alternate interior angles are congruent.
- **Alternate Exterior Angle Theorem**: If two parallel lines are intersected by a transversal, then alternate exterior angles are congruent.
- **Same-Side Interior Angle Theorem**: If two parallel lines are intersected by a transversal, then interior angles on the same side of the transversal are supplementary.
- **Same-Side Exterior Angle Theorem**: If two parallel lines are intersected by a transversal, then exterior angles on the same side of the transversal are supplementary.

2. Did you use inductive or deductive reasoning to prove each theorem?

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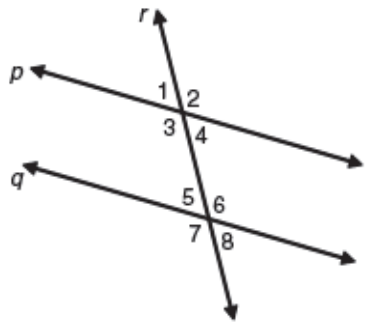
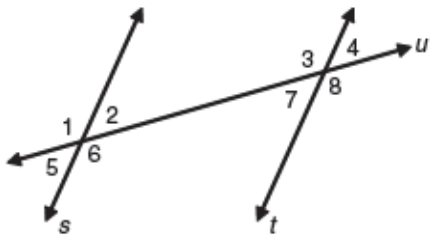
NOT IN YOUR BOOK

1. Use the given information to determine the measures of each of the numbered angles.

a. $p \parallel q$ and $m\angle 1 = 54°$

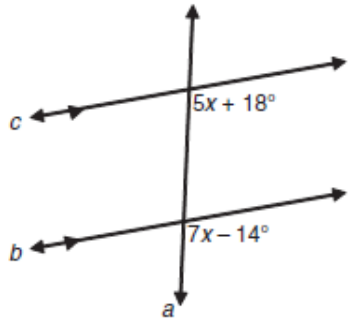


b. $s \parallel t$ and $m\angle 1 = 137°$

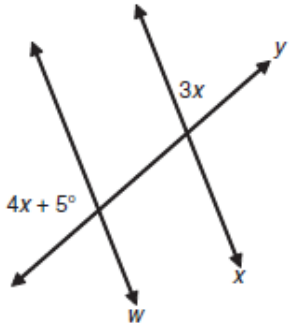


3. Solve for x in each figure.

a.

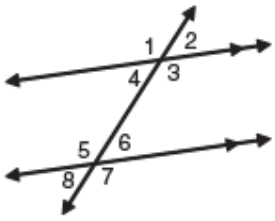


b.

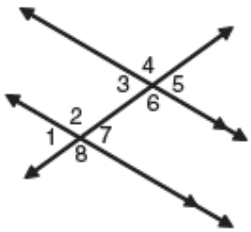


5. Determine the relationship between the indicated angles and write a postulate or theorem that justifies your answer.

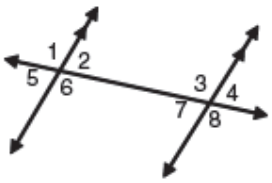
a. Angles 2 and 8



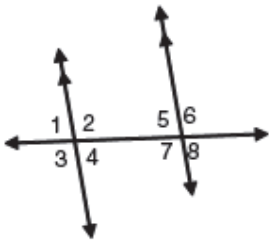
b. Angles 6 and 7



c. Angles 1 and 4



d. Angles 4 and 5



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Homework

Finish 2.4

Aug 24-2:00 PM