

Chapter 4- Lesson 4

Using Congruent Triangles-- a first look!

Goals

Use congruent triangles to prove other facts.

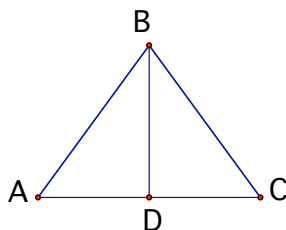
In previous lessons you have proved triangles are congruent using a variety of triangle congruence postulates and theorems. Proving triangles are congruent is a basic tool for many other proofs. In this lesson you will take a first look at how to use congruent triangles to prove other theorems.

If two triangles are congruent, what do you know about the corresponding (matching) parts of the the triangles?

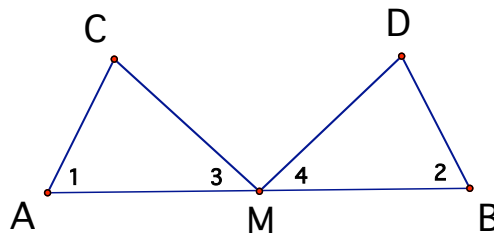
Practice Proofs

Do the following proofs on separate paper. Copy given, prove and drawing. No plans required.

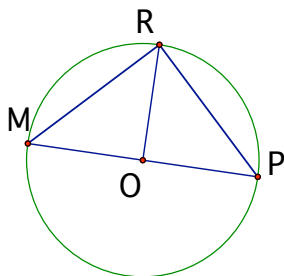
1. Given: $\overline{AB} \cong \overline{BC}$; D is midpoint of \overline{AC}
 Prove: $\angle A \cong \angle C$



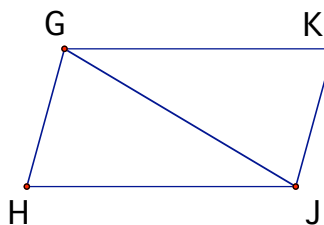
2. Given: M is the mid. pt. of \overline{AB} ;
 $\angle 1 \cong \angle 2$; $\angle 3 \cong \angle 4$
 Prove: $\overline{AC} \cong \overline{BD}$



3. Given: $\odot O$, $\overline{RO} \perp \overline{MP}$
 Prove: $\overline{MR} \cong \overline{PR}$

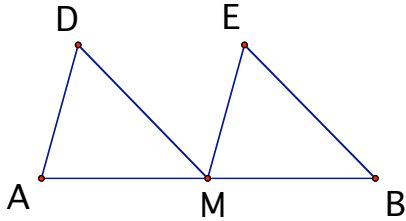


4. Given: $\angle HGJ \cong \angle KJG$; $\angle KGJ \cong \angle HJG$
 Prove: $\overline{HG} \cong \overline{KJ}$

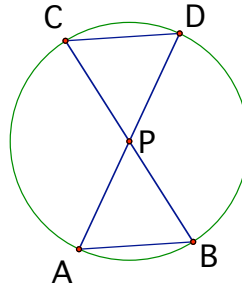


Chapter 4- Lesson 4: Using Congruent Triangles- A First Look

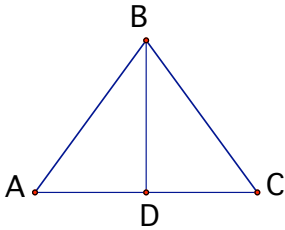
5. Given: M is the mid. pt. of \overline{AB} ,
 $\overline{AD} \cong \overline{ME}$; $\overline{AD} \parallel \overline{ME}$
 Prove: $\overline{MD} \parallel \overline{BE}$



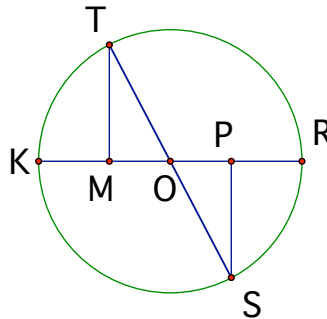
6. Given: $\odot P$
 Prove: $\overline{AB} \cong \overline{CD}$



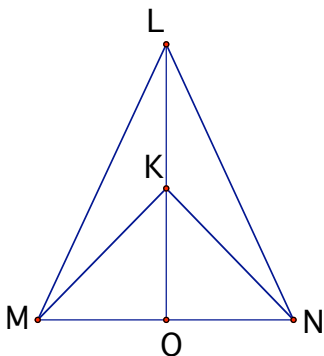
7. Given: $\angle A \cong \angle C$; \overline{BD} bisects $\angle ABC$
 Prove: $\overline{AB} \cong \overline{BC}$



8. Given: $\odot O$; $\angle T$ comp. to $\angle MOT$,
 $\angle S$ comp. to $\angle POS$
 Prove: $\overline{MO} \cong \overline{PO}$



9. Given: $\overline{KM} \cong \overline{KN}$; \overline{KO} bisects $\angle MKN$
 Prove: \overline{LO} bisects $\angle MLN$



10. Extra Challenge!
 Given: $\overline{BI} \cong \overline{RD}$; $\overline{RI} \cong \overline{BD}$; $\angle 3$ comp. to $\angle 2$
 Prove: $\triangle RIB$ is a right triangle

