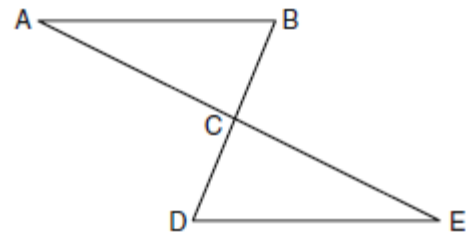*GEOMETRY*

Name _____

Lesson 25: CPCTC

Warm Up

Given: $\triangle ABC$ and $\triangle EDC$, C is the midpoint of $\overline{BD}$ and $\overline{AE}$
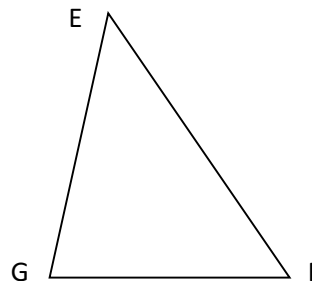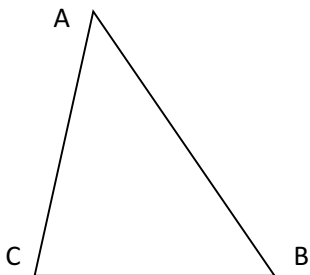
Prove: $\triangle ABC \cong \triangle EDC$

Mini Lesson:

Using Congruent Triangles in Proofs

If you know that two triangles are congruent, or if you can prove the triangles congruent using SSS, SAS, ASA, AAS, or HL, then the corresponding parts of the triangles are also congruent.

If you are given that $\overline{AB} \cong \overline{EF}$, $\overline{AC} \cong \overline{EG}$ and $\angle A \cong \angle E$, can you prove that $\angle C \cong \angle G$?
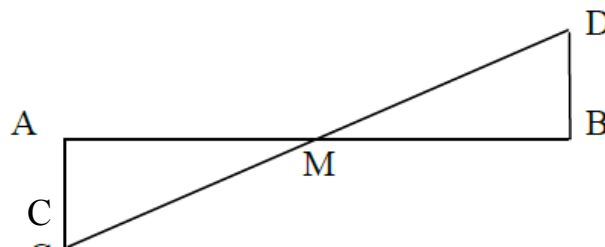
CPCTC

C_____P_____C_____T_____C_____

1.

Given: $\overline{CA} \perp \overline{AB}$, $\overline{DB} \perp \overline{AB}$

M is the midpoint of $\overline{AB}$

Prove: $\overline{CA} \cong \overline{DB}$

2. Given: $\overline{CA} \cong \overline{CB}$ and D is the midpoint of $\overline{AB}$.
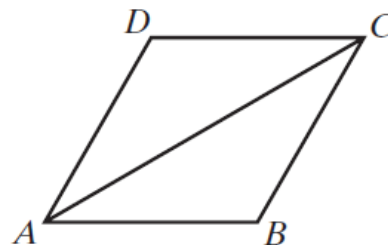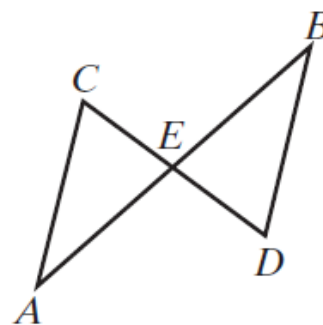
Prove: $\angle A \cong \angle B$

Work Time:

3.

Given: $\overline{AB} \cong \overline{CD}$ and
$\angle CAB \cong \angle ACD$

Prove: $\overline{AD} \cong \overline{CB}$

4. *Given:* $\overline{AEB}$ and $\overline{CED}$ bisect each
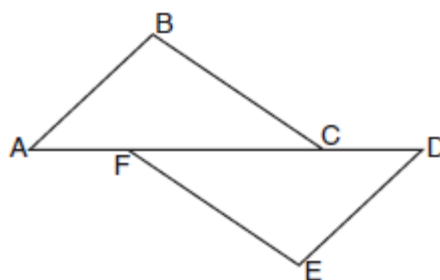other.

Prove: $\angle C \cong \angle D$

Name _____ Homework (TO BE COLLECTED)

Lesson 25: CPCTC

1. If $\triangle PQR \cong \triangle XYZ$, which statement is true?

　　(1) $\angle Q \cong \angle Y$　　　(3) $PQ \cong YZ$

　　(2) $\angle P \cong \angle Z$　　　(4) $PR \cong XY$

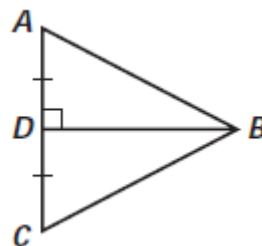2. Complete the proof below for the accompanying diagram by providing reasons for steps 3, 6, 8, and 9.

Given: $\overline{AFCD}$, $\overline{AB}\perp\overline{BC}$, $\overline{DE}\perp\overline{EF}$, $\overline{BC} \parallel \overline{FE}$, $\overline{AB} \cong \overline{DE}$

Prove: $\overline{AC} \cong \overline{FD}$

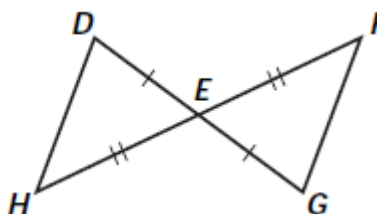| Statements	Reasons
1 $\overline{AFCD}$	1 Given
2 $\overline{AB}\perp\overline{BC}$, $\overline{DE}\perp\overline{EF}$	2 Given
3 $\angle B$ and $\angle E$ are right angles.	3
4 $\angle B \cong \angle E$	4 All right angles are congruent.
5 $\overline{BC} \parallel \overline{FE}$	5 Given
6 $\angle BCA \cong \angle EFD$	6
7 $\overline{AB} \cong \overline{DE}$	7 Given
8 $\triangle ABC \cong \triangle DEF$	8
9 $\overline{AC} \cong \overline{FD}$	9

3. Given: $\overline{BD} \perp \overline{AC}$ and D is the midpoint of $\overline{AC}$.

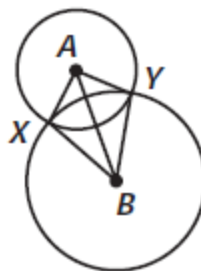   Prove: $\overline{BC} \cong \overline{BA}$

4.

   Given: $\overline{DG}$ and $\overline{FH}$ bisect each other.

   Prove: $\overline{DH} \parallel \overline{FG}$

5. Given: $\odot A$ and $\odot B$

Prove: $\angle AXB \cong \angle AYB$

6.

Given: $\overline{AB} \cong \overline{ED}$

C is midpoint $\overline{BD}$

$\overline{AB} \perp \overline{BD}$; $\overline{ED} \perp \overline{BD}$

Prove: $AC \cong EC$