

Name: _____

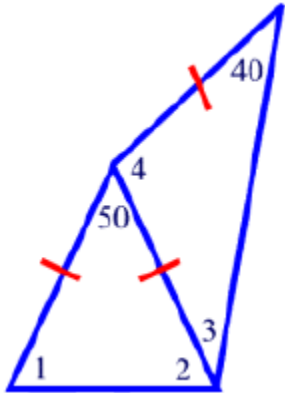
Date: _____

UNIT 3

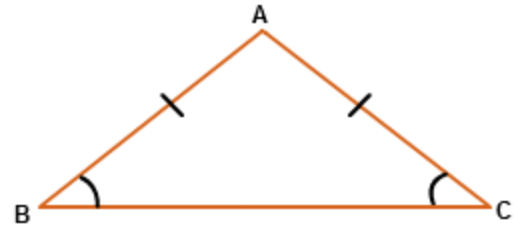
LESSON 10

AIM: HOW DO WE WRITE PROOFS INVOLVING ISOSCELES TRIANGLES?

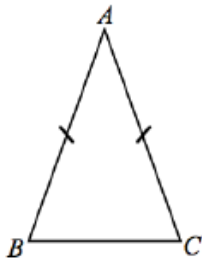
Do Now: Find all missing angles in the diagram below.



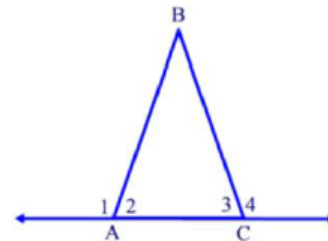
RECALL: Isosceles triangles have _____ congruent _____ and two congruent _____.



If $\overline{AB} \cong \overline{AC}$, what can you conclude?



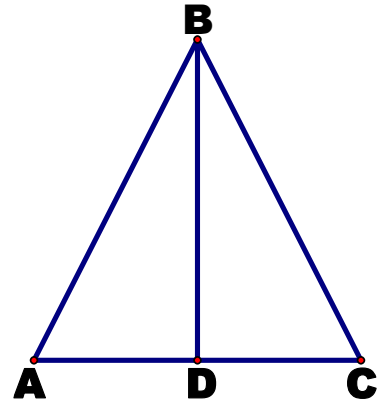
If $m\angle 1 \cong m\angle 4$, what can you conclude?



EXAMPLE #1:

Given: \overline{BD} is the perpendicular bisector of \overline{AC} .

Prove: $\triangle ABC$ is isosceles



STATEMENT

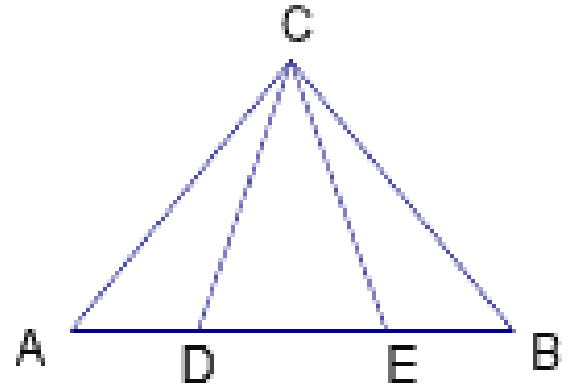
REASON

EXAMPLE #2:

Given: $\overline{AD} \cong \overline{BE}$

$\overline{CD} \cong \overline{CE}$

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



STATEMENT

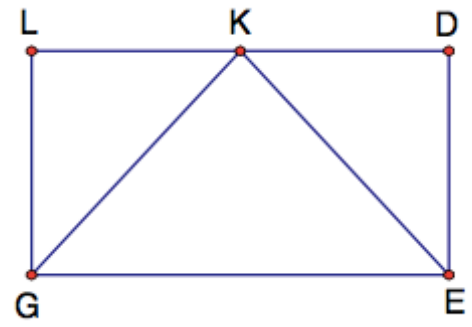
REASON

EXAMPLE #3:

Given: $\angle KGE \cong \angle KEG$, $\overline{GL} \perp \overline{LD}$, $\overline{ED} \perp \overline{DL}$ and

K is the midpoint of \overline{LD}

Prove: $\overline{LG} \cong \overline{DE}$



STATEMENT

REASON

Name: _____

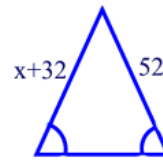
Date: _____

UNIT 3

LESSON 10 HOMEWORK

1. If a triangle is equilateral, then it is Isosceles.
TRUE or FALSE?

2. Find x .



3. In isosceles triangle ABC , $AB = BC$. Which statement will always be true?

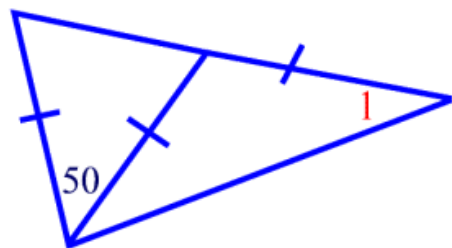
4. In the diagram below, $\triangle ABC \cong \triangle XYZ$. Which statement must be true?

- 1) $m\angle B = m\angle A$
- 2) $m\angle A > m\angle B$
- 3) $m\angle A = m\angle C$
- 4) $m\angle C < m\angle B$

- 1) $\angle C \cong \angle Y$
 - 2) $\angle A \cong \angle X$
 - 3) $\overline{AC} \cong \overline{YZ}$
 - 4) $\overline{CB} \cong \overline{XZ}$
-

5. In $\triangle ABC$, if $\overline{AB} \cong \overline{AC}$, $m\angle B = 3x + 15$ and $m\angle C = 7x - 5$, find the $m\angle B$ and $m\angle C$.

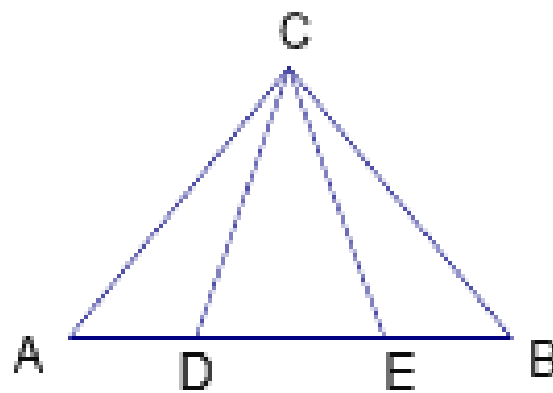
6. Find the $m\angle 1$



Given: $\overline{AD} \cong \overline{BE}$

$\overline{CA} \cong \overline{CB}$

Prove: $\overline{CD} \cong \overline{CE}$



STATEMENT

REASON