

Name: \_\_\_\_\_

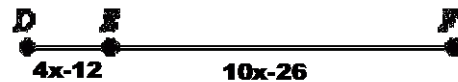
Date: \_\_\_\_\_

**UNIT 3**

**LESSON 11**

**AIM: HOW DO WE PROVE TRIANGLES CONGRUENT USING THE ADDITION PROPERTY?**

Do Now: If  $\overline{DF} = 200$ , find the lengths of  $\overline{DE}$  and  $\overline{EF}$ .



**WHAT IS THE ADDITION PROPERTY?**

SEGMENT	ANGLE
<p><math>AB + BC = AC</math></p>	<p><math>\angle OEM + \angle GEM = \angle GEO</math></p>

**WHAT CAN YOU CONCLUDE?**

<p><u>Given:</u> <math>AD = CE</math> <math>DB = EB</math></p> <p><u>Prove:</u> <math>AB = CB</math></p> <div style="text-align: center;"> </div>	<p><u>Given:</u> <math>m\angle 1 = m\angle 4</math> <math>m\angle 2 = m\angle 3</math></p> <p><u>Prove:</u> <math>m\angle BAD = m\angle BCD</math></p> <div style="text-align: center;"> </div>
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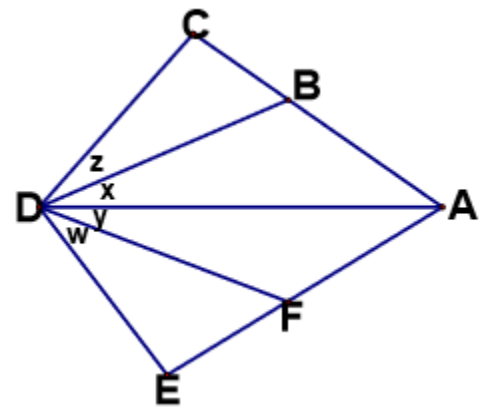
**EXAMPLE #1:**

Given:  $\overline{DC} \cong \overline{DE}$

$$\angle X \cong \angle Y$$

$$\angle Z \cong \angle W$$

Prove:  $\triangle ADC \cong \triangle ADE$



STATEMENT

REASON

**EXAMPLE #2:**

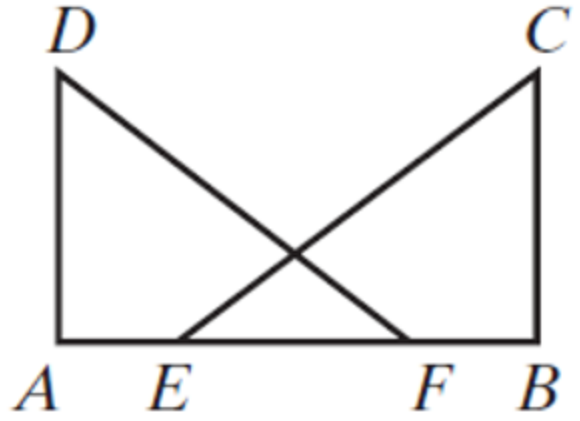
Given:  $\overline{AE} \cong \overline{FB}$

$\overline{DA} \cong \overline{CB}$

$\overline{DA} \perp \overline{AB}$

$\overline{CB} \perp \overline{AB}$

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



STATEMENT

REASON

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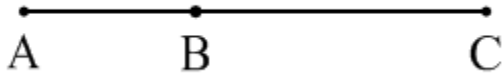
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**UNIT 3**

**LESSON 11**

**HOMEWORK**

1. Given that  $AB = DE$  and  $BC = EF$ . If  $AB = 3$  units and  $EF = 8$  units, what can you conclude about  $AC$  and  $DF$ ?



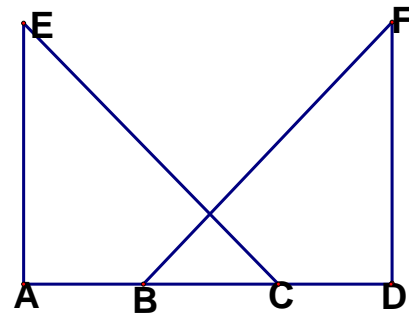
2. Given:  $\overline{AE} \perp \overline{AD}$

$$\overline{DF} \perp \overline{DA}$$

$$\overline{AE} \cong \overline{DF}$$

$$\overline{AB} \cong \overline{DC}$$

Prove:  $\overline{EC} \cong \overline{FB}$



**STATEMENT**

**REASON**