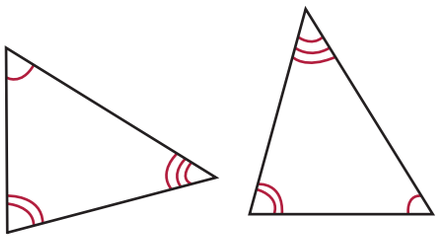
Unit 4: Geometry Lesson 4.3

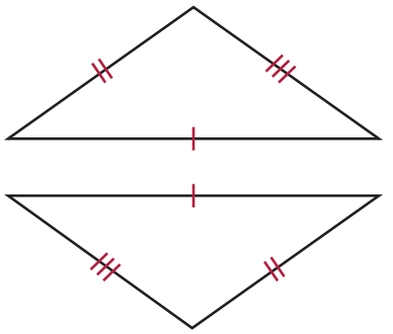
Coach's Corner – V

1. Can it be concluded that the following triangles are congruent? Explain.

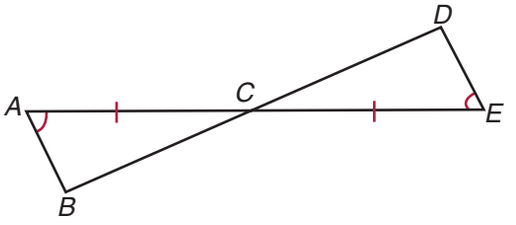
a.



b.

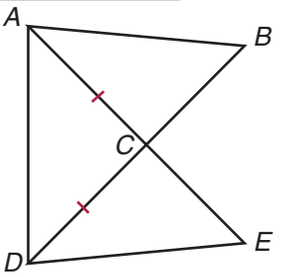


2. Prove that the two triangles in the diagram are congruent.



3. Convert the proof from Example 3 of *Lesson 4.3* into a two column proof.

Statement	Justification

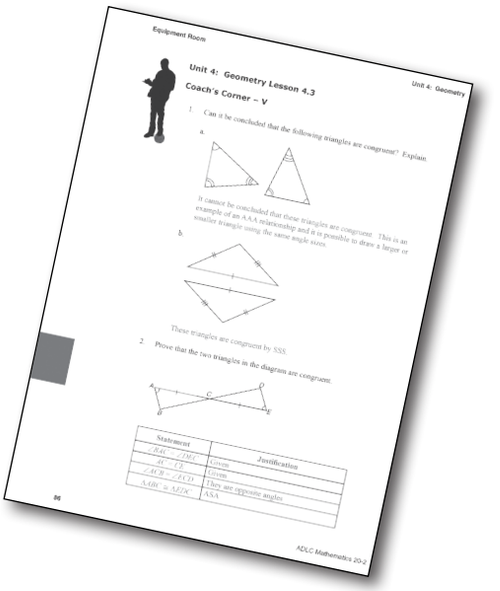


4. In the diagram, knowing that ΔACD is isosceles does not provide enough information to prove $\Delta ADE \cong \Delta DAB$.

   a. List an additional piece of information that would allow for a proof that $\Delta ADE \cong \Delta DAB$.

   b. Use this new piece of information to prove $\Delta ADE \cong \Delta DAB$.

Please go to the *Equipment Room* to check your solutions before proceeding to *Game On!*, on the next page of this *Workbook*.


Equipment Room

Unit 4: Geometry Lesson 4.3

Unit 4: Geometry

Coach's Corner – V

1. Can it be concluded that the following triangles are congruent? Explain.

a.

It cannot be concluded that these triangles are congruent. This is an example of an AAA relationship and it is possible to draw a larger or smaller triangle using the same angle sizes.

b.

These triangles are congruent by SSS.

2. Prove that the two triangles in the diagram are congruent.

Statement	Justification
$\overline{AG} \cong \overline{DE}$	Given
$\overline{AC} \cong \overline{DC}$	Given
$\angle ACB \cong \angle DCE$	They are opposite angles
$\triangle ABC \cong \triangle EFC$	ASA

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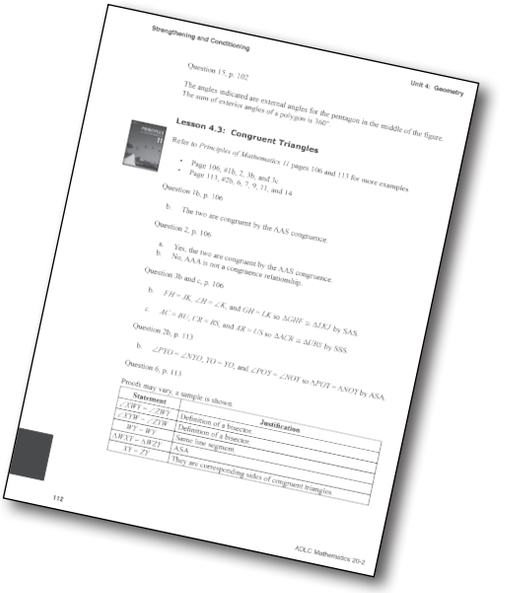
ADLC Mathematics 20-2

After you have assessed your work, reflect upon your understanding of the concepts addressed in the *Coach's Corner* exercises in the table provided.

Question Number	Got it!	Almost there…	Need to retry or ask for help.
1			
2			
3			
4			

Note: Before you complete *Game On!*, you may review your skills and get more practice by completing the following problems in *Principles of Mathematics 11*.

- Page 106, #1b, 2, 3b, and 3c
- Page 113, #2b, 6, 7, 9, 11, and 14


Strengthening and Conditioning

Unit 4: Geometry

Question 15, p. 102

The angles indicated are external angles for the pentagon in the middle of the figure. The sum of exterior angles of a polygon is 360°.

Lesson 4.3: Congruent Triangles

Refer to *Principles of Mathematics 11* pages 106 and 113 for more examples.

- Page 106, #1b, 2, 3b, and 3c
- Page 113, #2b, 6, 7, 9, 11, and 14

Question 1b, p. 106

b. The two are congruent by the AAS congruence.

Question 2, p. 106

a. Yes, the two are congruent by the AAS congruence.

b. No, AAA is not a congruence relationship.

Question 3b and c, p. 106

b. $FH = JK$, $\angle H = \angle K$, and $GH = LK$ so $\triangle GHF \cong \triangle LKJ$ by SAS.

c. $AC = BC$, $CR = RS$, and $AR = US$ so $\triangle ACR \cong \triangle UBS$ by SSS.

Question 2b, p. 113

b. $\angle PYO = \angle NYO$, $YO = YO$, and $\angle POY = \angle NOY$ so $\triangle POY = \triangle NOY$ by ASA.

Question 6, p. 113

Proofs may vary; a sample is shown.

Statement	Justification
$\angle AWY = \angle ZWY$	Definition of a bisector
$\angle XYW = \angle ZYW$	Definition of a bisector
$WY = WY$	Same line segment
$\triangle WYX = \triangle WYZ$	ASA
$XY = ZY$	They are corresponding sides of congruent triangles

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ADLC Mathematics 20-2

Check your work in *Strengthening and Conditioning*.