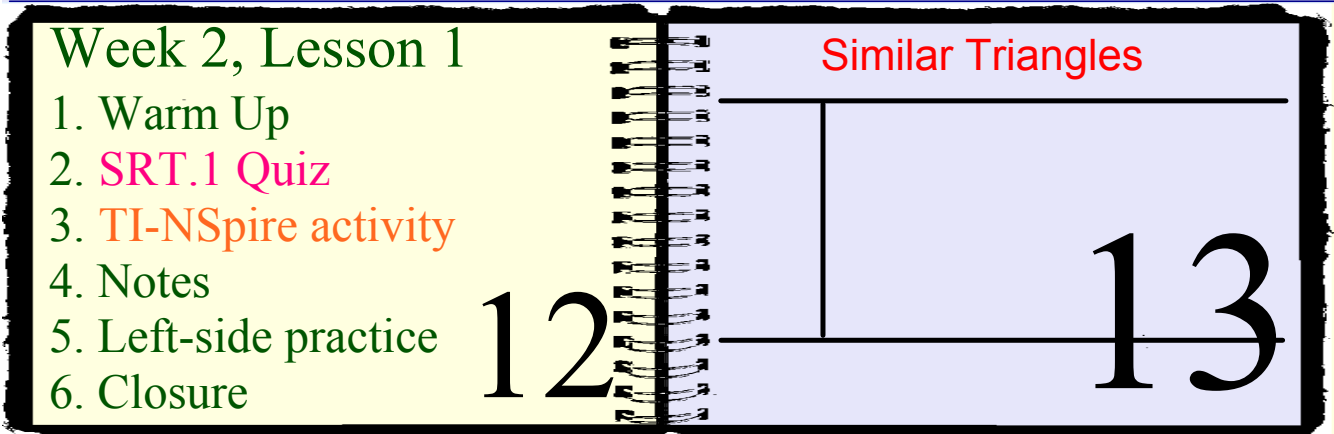


# EQ: SRT.2 How do I determine if two triangles are similar?

Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question



Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up

## Warm Up:

To prepare for the quiz, take a minute to review your notes and the left-side practices on pages 6-7 and pages 8-9 of your interactive notebook.

Then, self-assess with the following questions.

1. Do you know how to graph coordinates?
2. Do you know how to apply a dilation?
3. Do you know how to find the slope of segments?
4. Do you know how to find the lengths of segments?
5. Do you know how to find ratios?

# SRT.1 Quiz

ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity

## TI-NSpire Activity

Welcome to "Similar Triangles."

To move through the tabs, you can use your mouse, or press [ctrl] and then left/right.

If you need help, please ask your team!

Post TI-NSpire Review...

List everything you can remember about congruent triangles from Semester 1.

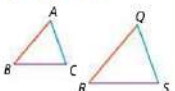
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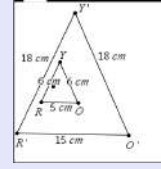
Side-Side-Side Similarity  
SSS~

If the corresponding sides of 2 triangles are proportional, then the triangles are similar

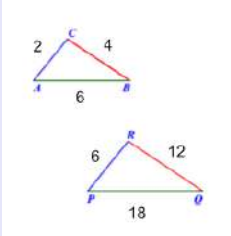
If ...  $\frac{AB}{QR} = \frac{AC}{QS} = \frac{BC}{RS}$



Then ...  $\triangle ABC \sim \triangle QRS$



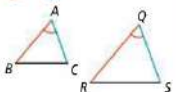
Ex: Are the two triangles similar? If so explain why and provide a similarity statement. If not, explain why.



Side-Angle-Side Similarity  
SAS~

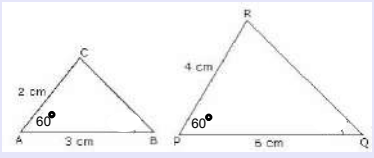
If an angle of 1 triangle is congruent to another and the sides that include those angles are proportional, then the triangles are similar

If ...  $\frac{AB}{QR} = \frac{AC}{QS}$  and  $\angle A \cong \angle Q$



Then ...  $\triangle ABC \sim \triangle QRS$

Ex: Are the two triangles similar? If so explain why and provide a similarity statement. If not, explain why.



\*In similar triangles, **SIDES** are **PROPORTIONAL** and **ANGLES** are **CONGRUENT**.

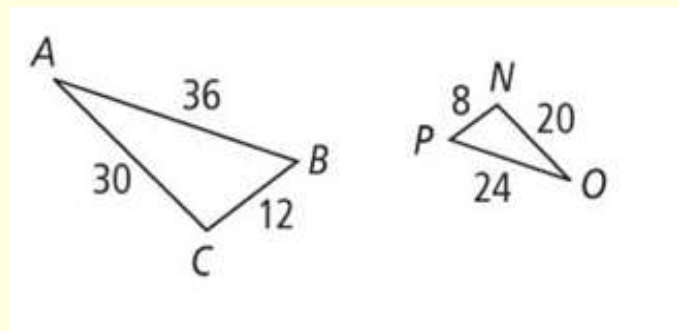
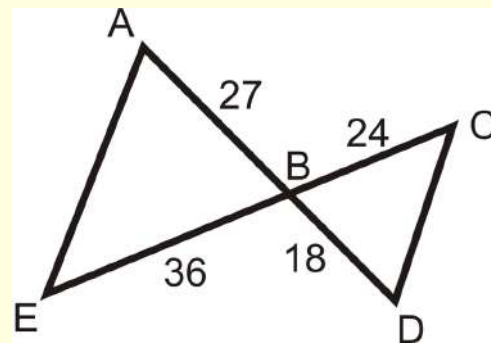
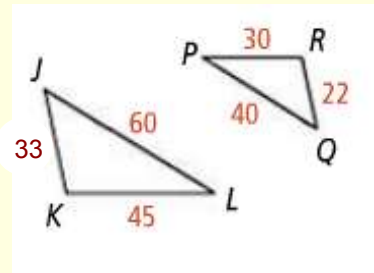
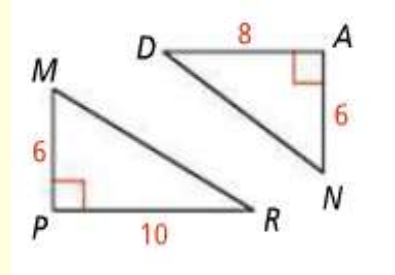
Summary:

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## Left-Side Practice

For each of the following pairs of triangles...

Are the two triangles similar? If so, explain why and provide a similarity statement. If not, explain why. Show all of your work.



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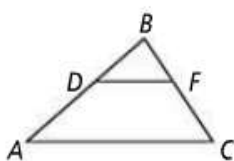
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**Right Side...**

Write a summary that answers the essential question.

**Left Side...**

$\triangle ABC \sim \triangle DBF$ . Complete each statement.



7.  $m\angle A = m\angle \underline{\quad ? \quad}$

8.  $\frac{AB}{DB} = \frac{BC}{\blacksquare}$

Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure

# EQ: SRT.2 How do I determine if two triangles are similar?

Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question

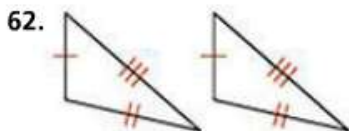
<p><b>Week 2, Lesson 2</b></p> <ol style="list-style-type: none"> <li>1. Warm Up</li> <li>2. Left-Side Practice</li> <li>3. Independent Practice</li> <li>4. Closure</li> </ol>	<p><b>Similar Triangles</b></p>
14	15

Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up

## Warm Up:

1. In your own words, summarize SSS~ and SAS~.
2. Draw a picture to illustrate SSS~.
3. Draw a picture to illustrate SAS~.

How can you prove that the triangles are congruent?



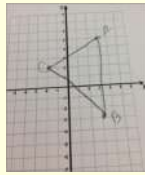
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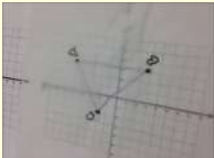
## Exploring Triangle Similarity

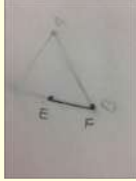
Definition	Properties
<div style="border: 1px solid black; border-radius: 50%; width: 100px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <b>Similar Triangles</b> </div>	
Examples	Non-examples



  

1. Draw a triangle on the coordinate plane.  
 Person 1 draws an obtuse triangle.  
 Person 2 draws an acute triangle.  
 Person 3 draws a right triangle.  
 Person 4 chooses one of the above to draw


2. Copy your triangle onto a sheet of patty paper. Label the vertices A, B, and C so you have a congruent copy of your original triangle.


3. Using another sheet of patty paper, draw a line segment with a length exactly 1/2 of BC and label the segment endpoints E and F.


4. Copy angle B from the original triangle onto the new line segment at endpoint E.
5. Copy angle C from the original triangle onto line segment at endpoint F.
6. Extend the lines to form a new triangle, label it DEF.



7. Mark the triangles to indicate that..

  - angle B is congruent to angle E
  - angle C is congruent to angle F

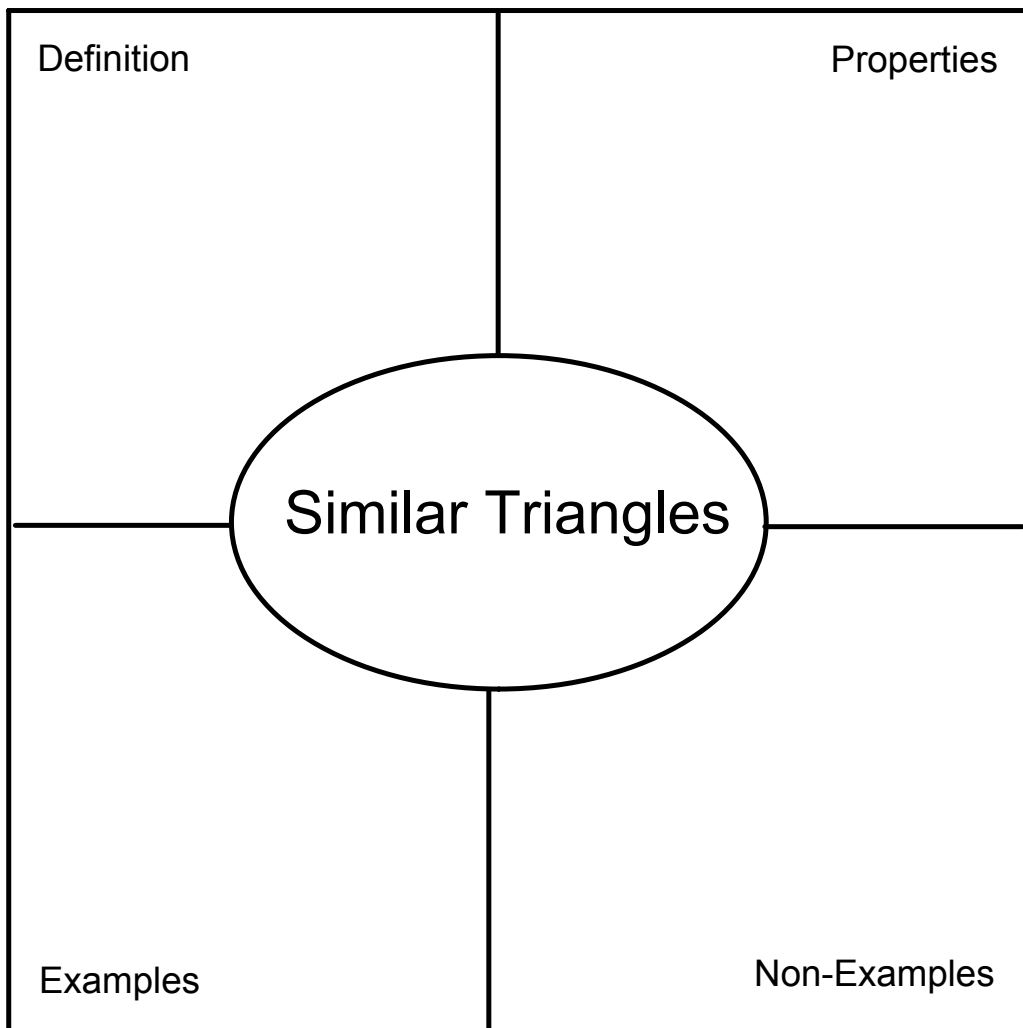
  

### Questions! (Left-Side)

1. Compare the two triangles: What do you notice? What is observed? List your observations.
2. Write down congruency statements for the corresponding angles.
3. Write down proportionality statements for the corresponding sides.
4. Can we conclude that Triangles ABC and DEF are similar? How do you know?

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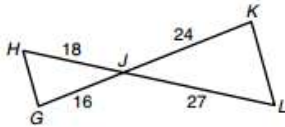
Name \_\_\_\_\_ pd \_\_\_\_\_

IAN page 12

**SRT.2 Practice**

For each of the pair of triangles shown below, determine if the two triangles are similar. If so, explain why and provide a similarity statement. If not, explain why. Show all of your work.

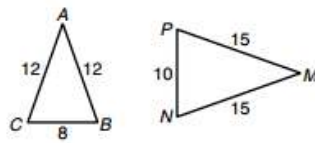
1.



\_\_\_\_\_

\_\_\_\_\_

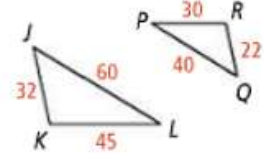
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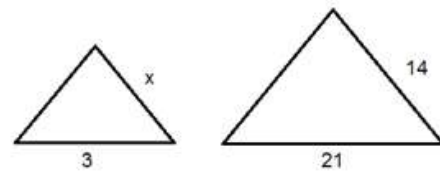
3.



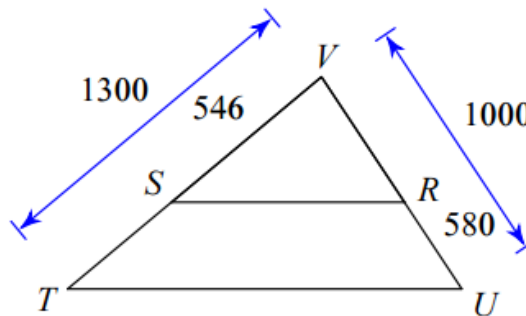
\_\_\_\_\_

\_\_\_\_\_

4. Given that the triangles shown at the right are similar, find the value of x.



5. Are the two triangles shown similar? If so, explain why and provide a similarity statement. If not, explain why.



Midterm Review...

6.  $\triangle ABC$  is dilated, with the center of dilation at the origin, to form  $\triangle A'B'C'$ . Which of the following statements may be false?

(a)  $\angle ABC \cong \angle A'B'C'$

(b)  $\triangle ABC \cong \triangle A'B'C'$

(c)  $\triangle ABC \sim \triangle A'B'C'$

(d)  $\frac{AB}{A'B'} = \frac{AC}{A'C'}$

7. Two polygons are similar if their corresponding angles are \_\_\_\_\_ and their corresponding sides are \_\_\_\_\_.

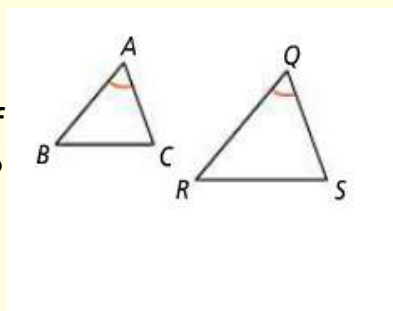
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**Right Side...**

Write a summary that answers the essential question.

**Left Side...**

Is there enough information to prove the following 2 triangles similar? If so, how? If not, what additional information is needed?



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# EQ: SRT.3 How do I prove triangles similar using AA~?

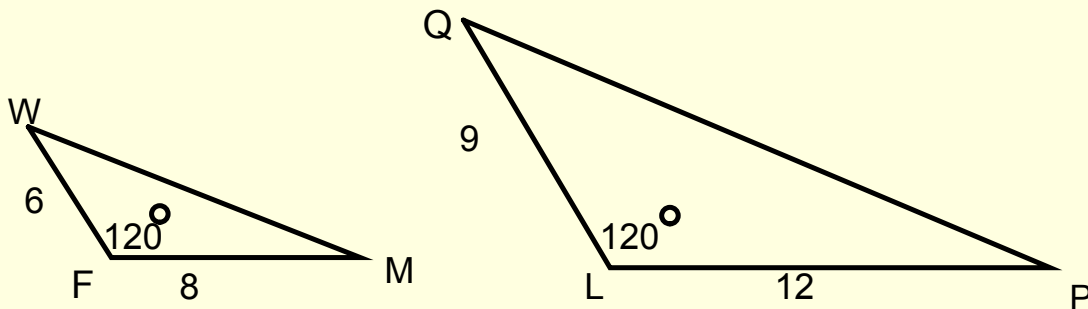
Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question

<p><b>Week 2, Lesson 3</b></p> <ol style="list-style-type: none"> <li>1. Warm Up</li> <li>2. TI-NSpire activity</li> <li>3. Notes</li> <li>4. Left-Side Practice</li> <li>5. Closure</li> </ol>	<p><b>Similar Triangles</b></p>
16	17

Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up

## Warm Up:

Are the two triangles shown below similar? If so, explain why and write a similarity statement. If not, explain why.



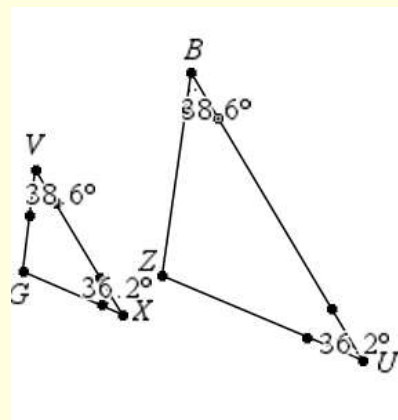
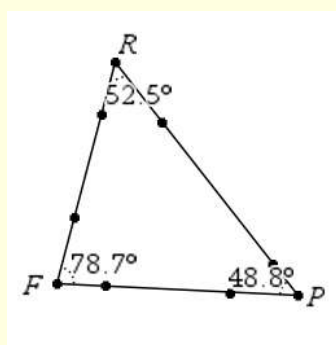
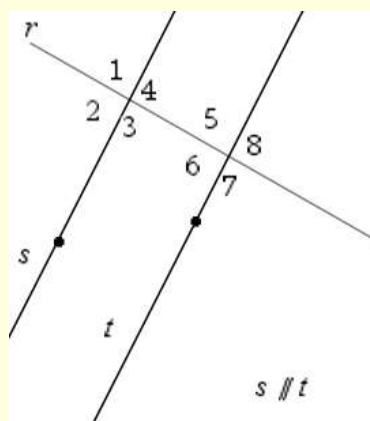
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# TI-NSpire Activity

Welcome to "1st Semester Review."

To move through the tabs, you can use your mouse, or press [ctrl] and then left/right.

If you need help, please ask your team!



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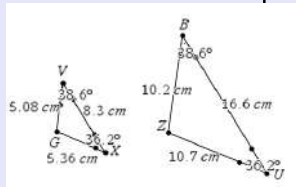
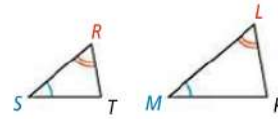
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## Angle-Angle Similarity

AA~

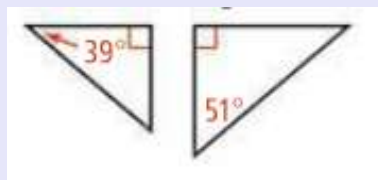
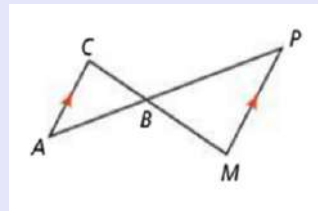
If 2 angles of one triangle are congruent to 2 angles of another triangle, then the triangles are similar

If ...  $\angle S \cong \angle M$  and  $\angle R \cong \angle L$  Then ...  $\triangle SRT \sim \triangle MLP$



This theorem is based on the fact that the 3 angles of a triangle always add to  $180^\circ$ .

Ex: Given the diagram below, explain how the two triangles are similar by AA~.

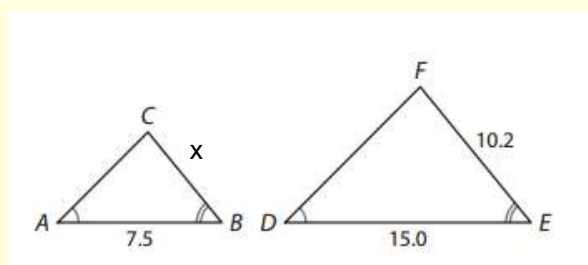
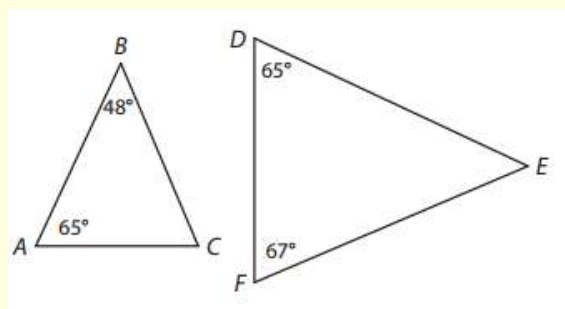
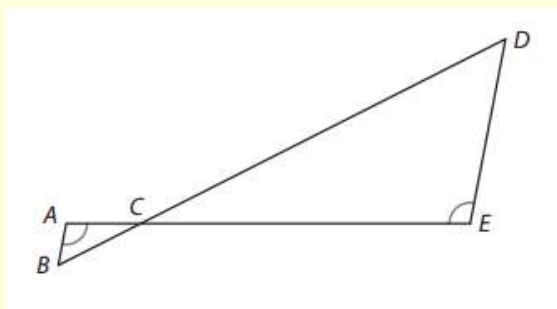


Summary:

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### Left-Side Practice

Determine if the following sets of triangles are similar. If they are, state the reason why and write a similarity statement.



### Processing AA~, SSS~, and SAS~ worksheet

To be taped on page 16

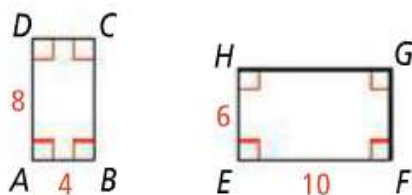
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**Right Side...**

Write a summary that answers the essential question.

**Left Side...**

Are the two polygons shown below similar? If so, give the similarity ratio of the first polygon to the second. If not, explain.



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EQ: SRT.3 How do I prove triangles similar using AA~?

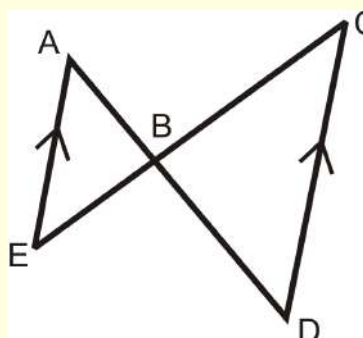
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<p>Week 2, Lesson 4</p> <ol style="list-style-type: none"> <li>1. Warm Up</li> <li>2. Similarity Fold-able</li> <li>3. Project</li> <li>4. Closure</li> </ol>	<p>Similar Triangles</p>
18	19

Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up

**Warm Up:**

Given the diagram below, explain how the two triangles are similar by AA~.



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## Similarity Fold-able

FOLD along the SOLID lines

CUT along the DOTTED lines

You will complete your fold-able using examples and descriptions.

You will also need to draw a picture example for some of the terms.

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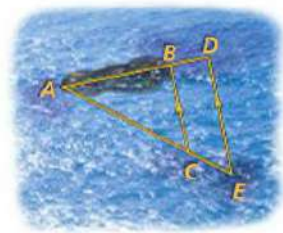
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Right Side...

Write a summary that answers the essential question.

Left Side...

**Writing** The size of an oil spill on the open ocean is difficult to measure directly. Use the figure at the right to describe how you could find the length of the oil spill indirectly. What measurements and calculations would you use?



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# EQ: SRT.3 How do I prove triangles similar using AA~?

Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question

Week 2, Lesson 5 (pds 6 & 7)

1. Warm Up
2. Practice
- 3.
4. Closure

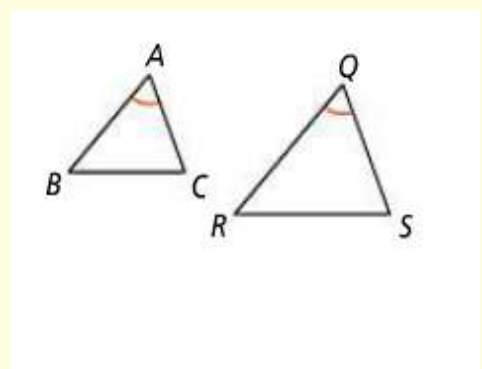
14 15

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Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up

## Warm Up:

Is there enough information to prove the following 2 triangles similar? If so, how? If not, what additional information is needed?

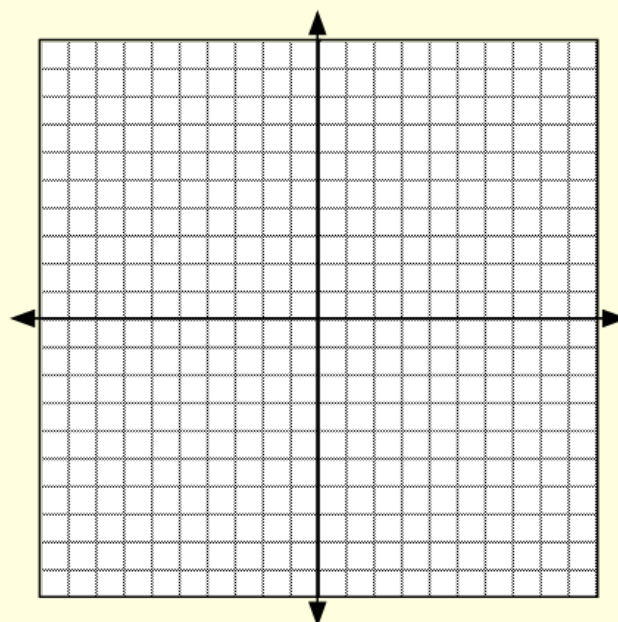


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## Left-Side Practice

Given  $XY$  with endpoints at  $X(6, -6)$  and  $Y(-4, -2)$ ,

- (a) Graph  $XY$ .
- (b) Apply a dilation of  $\frac{1}{2}$  to  $XY$  and label the image  $X'Y'$ .
- (c) Find the slopes of  $XY$  and  $X'Y'$ .
- (d) Find the lengths of  $XY$  and  $X'Y'$ .
- (e) Find the ratio of  $X'Y':XY$ .



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