

Welcome! Please get your ISN and have a seat! Be prepared to be called to the board to do these!!!!!!!

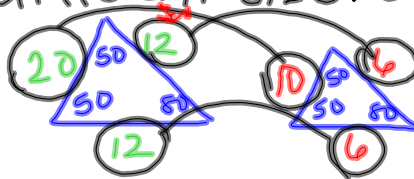
1. Can a triangle have side lengths 22, 33, and 25? Why or why not? Show your work.
2. Can a triangle have side lengths 3, 7, and 11? Why or why not? Show your work.
3. Two sides of a triangle are 15 ft and 12 ft. What could be the length of the third side?  
 $15 - 12 = 3$   
 $15 + 12 = 27$   
 $3 < x < 27$
4. Determine the Longest side of  $\triangle MNO$ , where  $m\angle M = 56$ ,  $m\angle N = 108$ , and  $m\angle O = 16$ .

Oct 19-11:16 AM

WWK



-similar- polygons with congruent angles and proportional side - Same shape, but a different size. Symbol is  $\sim$ .



-ratio-

a proportion that compares two quantities to each other - words, colon, or fraction

$$20 \text{ to } 10$$

$$20:10$$

$$\frac{20}{10}$$

Oct 19-11:15 AM

## TOC 49-50 Similar Triangles

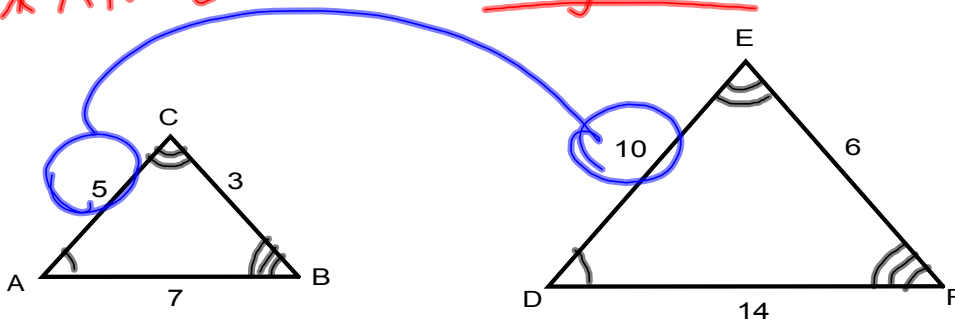
Two triangles are similar when one is a scale model of the other. **\*\* CORRESPONDING ANGLES MUST BE CONGRUENT\*\***



**\*\* CORRESPONDING ANGLES MUST BE CONGRUENT\*\***

Oct 19-11:14 AM

TOC 49-50 Similar Triangles  
**\* SIDES are proportional!!**  
**\* ANGLES are congruent!!**



**Write the ratio of the sides in all three ways.**

words  
5 to 10

colon  
5:10

fraction  
 $\frac{5}{10}$

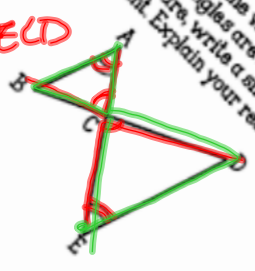
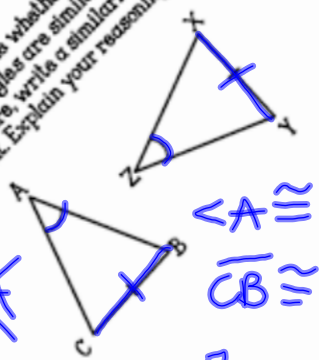
Oct 19-11:14 AM

# AA

(Angle-Angle)  
Similarity Postulate

If 2 angles of the  $\Delta$ 's are congruent to each other, then the  $\Delta$ 's are similar.

Nov 10-8:39 AM

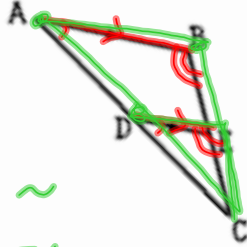
<p><b>2</b></p> <p>Determine whether the triangles are similar. If they are, write a similarity statement. Explain your reasoning.</p> <p><math>\angle A \cong \angle E</math> <math>\angle ACB \cong \angle ECD</math></p> <p><math>\triangle ABC \sim \triangle EDC</math> by <u>AA</u>.</p> 	<p><b>1</b></p> <p>Determine whether the triangles are similar. If they are, write a similarity statement. Explain your reasoning.</p> <p><del>SA</del></p> <p><math>\angle A \cong \angle Z</math> <math>\overline{CB} \cong \overline{XY}</math></p> <p><u>NO!</u></p> 
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Nov 10-8:40 AM

3

Determines whether the triangles are similar. If they are, write a similarity Statement. Explain your reasoning.

$\angle A \cong \angle D$   
 $\angle B \cong \angle E$



$\triangle ABC \sim$   
 $\triangle DEC$  by  
AA

Nov 10-8:40 AM

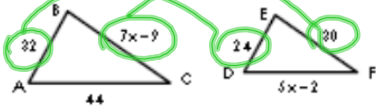
Welcome! Please watch the EdPuzzle on similar triangles in your Google classroom!



Nov 14-8:29 AM

**SSS (Side-Side-Side) Similarity Theorem**  
 If all 3 sides of 2  $\Delta$ 's are proportional,  
 then the  $\Delta$ 's are similar!

**Example 1:**  
 Find the value of  $x$  that make  $\Delta ABC \sim \Delta DEF$ .



$$\frac{22}{24} = \frac{7x-9}{20}$$

$$960 = 24(7x-9)$$

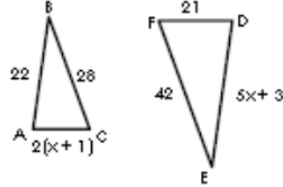
$$960 = 168x - 216$$

$$+216 \quad \downarrow +216$$

$$\frac{1176}{168} = \frac{168x}{168}$$

**X=7**

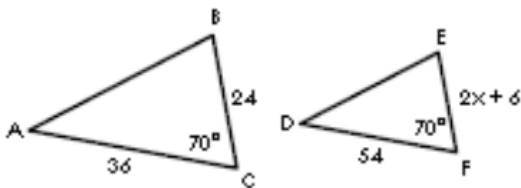
**Example 2:**  
 Find the value of  $x$  that make  $\Delta ABC \sim \Delta DEF$ .



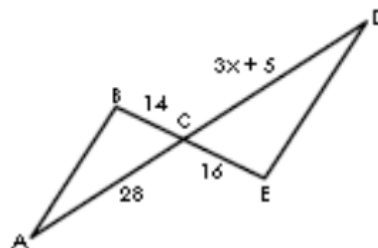
Nov 10-8:38 AM

**SAS (Side-Angle-Side) Similarity Theorem**

**Example 3:**  
 Find the value of  $x$  that make  $\Delta ABC \sim \Delta DEF$ .



**Example 4:**  
 Find the value of  $x$  that make  $\Delta ABC \sim \Delta DEC$ .

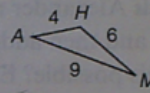


Nov 10-8:39 AM

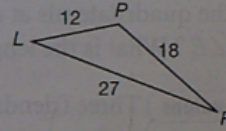
# Lesson Practice Homework pg 269 a-h

Use the two similar triangles to answer a through e.

- a. Write a ratio comparing the lengths of segments  $\overline{HA}$  to  $\overline{AM}$  to  $\overline{MH}$ .



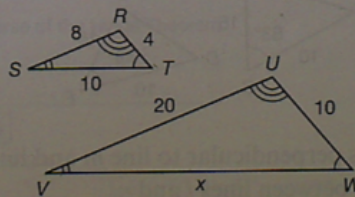
- b. Write a ratio comparing  $AM$  to  $LR$  in three ways, in simplest form.



- c. Write a proportion to show that  $HM:PR = AM:LR$ .

- d. What is the value of  $x$  in the proportion  $\frac{8}{7} = \frac{x}{21}$ ?

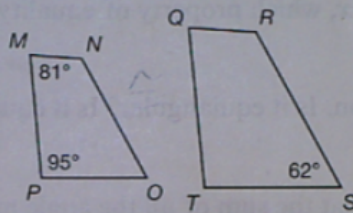
- e. If  $\triangle RST \sim \triangle UVW$ , find the missing length in  $\triangle UVW$ .



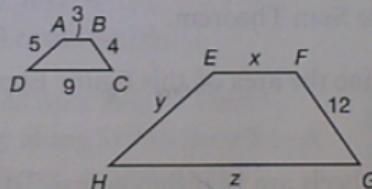
Oct 19-11:26 AM

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- f. If the polygons  $MNOP$  and  $QRST$  are similar, what are the measures of  $\angle O$  and  $\angle R$ ?



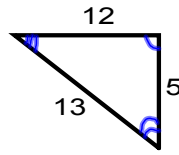
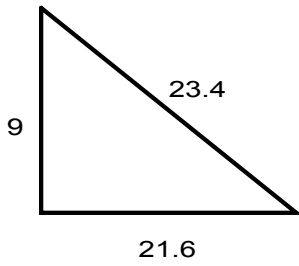
- g. If the polygons  $ABCD$  and  $EFGH$  are similar, what are the values of  $x$ ,  $y$ , and  $z$ ?



- h. Cree uses a 21-foot ladder and a 12-foot ladder while painting the exterior of a house. Each ladder forms the same angle with the ground. If the longer ladder reaches 18 feet up the wall, how high does the other ladder reach, to the nearest foot?

Oct 19-11:27 AM

**Ex 1 (pg 47)**

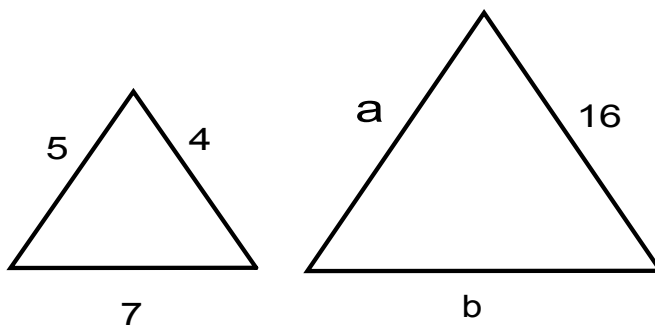


**Write the ratio of the sides in all three ways.**  
words                      colon                      fraction

Oct 19-11:21 AM

**Ex 2 (pg 47)**

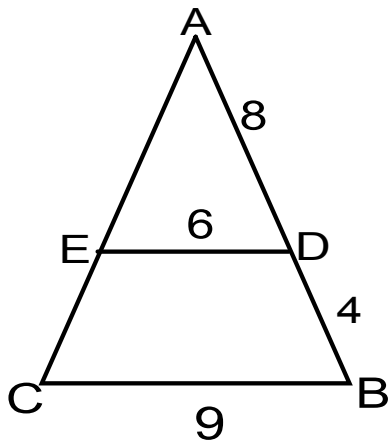
Find the missing side lengths.



Oct 19-11:23 AM

### Ex 3 (pg 47)

Prove the triangles are similar.



Oct 19-11:24 AM

Name: ney Date \_\_\_\_\_

Topic : Finding Sides of Similar Triangles - Worksheet 3

Finding Sides of Similar Triangles

MN=18  
NO=24  
MO=49  
IS=49  
IO=56

In the figure given to the left,  $\Delta MNO$  is similar to  $\Delta IOS$ .

- Write three equal ratios to show corresponding sides are proportional.  $\frac{MN}{IO} = \frac{NO}{OS} = \frac{MO}{IS}$
- Find the value of IO **42**
- Find the value of MO **21**
- Find the ratio  $m \cdot M / m \cdot I$
- Find the ratio  $m \cdot O / m \cdot S$

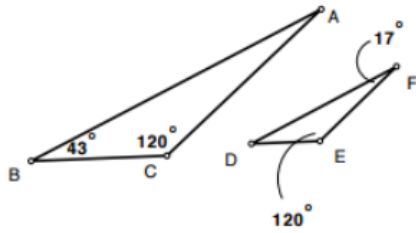
Oct 22-2:33 PM



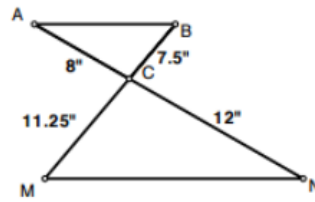
Welcome! Please get your ISN and warmup book and have a seat!

Determine if each pair of triangles is similar. If they are similar, complete the similarity statement and state the method used to prove the similarity.

1)  $\triangle ABC \sim \triangle$  \_\_\_\_\_ by \_\_\_\_\_



2)  $\triangle ABC \sim \triangle$  \_\_\_\_\_ by \_\_\_\_\_



Oct 22-3:00 PM