

Name: _____ Date: _____ Block: _____

Geometry Chapter 6 Assignment Sheet

Section/Assignment	Due Date	Turned in?
Section 6.1 HW: 6.1 Worksheet		
Section 6.2 HW: 6.2 Worksheet		
Section 6.3 HW: 6.3 Worksheet		
Section 6.4 HW: 6.4 Worksheet		
Section 6.5 HW: 6.5 Worksheet		
Section 6.6 HW: 6.6 Worksheet		
Chapter 6 Review		

The Chapter 6 Test is on _____.

****If all seven assignments are completed *by the day the chapter 6 test is given* you will receive 5 extra points on the test. ****

Ratio and Proportion

Notes 6.1

Ratio of a to b .	
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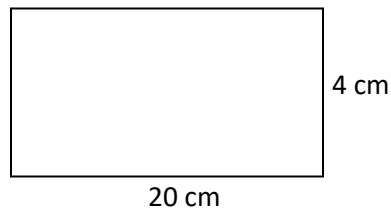
EX 1: Converting Units.

A) $\frac{12 \text{ cm}}{4 \text{ m}}$

B) $\frac{3 \text{ yd.}}{6 \text{ ft.}}$

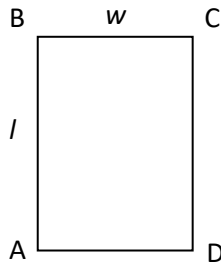
EX 2: Writing Ratios.

A) Find the width to length ratio of each rectangle. Then simplify the ratio.

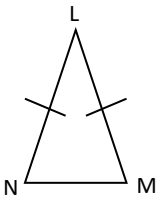


EX 3: Using Ratios.

A) The perimeter of rectangle $ABCD$ is 60 cm. The ratio of $AB:BC$ is 3:2. Find the length and width of the rectangle.



B) The perimeter of the isosceles triangle shown is 56 in. The ratio of $LM:MN$ is 5:4. Find the lengths of the sides and the base of the triangle.



EX 4: Extended Ratios (Comparing more than two items)

A) The measure of the angles in $\triangle JKL$ are in the extended ratio of 1:2:3. Find the measures of the angles. (Draw a sketch)

B) The measures of the angles in a triangle are in the extended ratio 3:4:8. Find the measures of the angles. (draw a sketch)

Difference between *ratio* and *proportion*.

RATIO	PROPORTION

If $\frac{m}{a} = \frac{b}{r}$, which of the following is not true?

- a. $\frac{a}{m} = \frac{r}{b}$ b. $mb = ar$ c. $mr = ab$ d. $\frac{r}{a} = \frac{b}{m}$

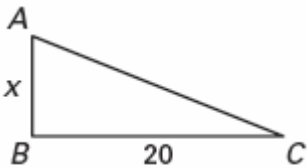
EX 5: Solving Proportions. (Cross Multiplying)

A) Solve: $\frac{2}{7} = \frac{6}{x}$

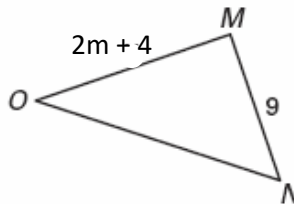
B) Solve: $\frac{x-6}{4} = \frac{x}{10}$ (DISTRIBUTE!!!)

EX 6: Using Proportions.

A) $AB : BC$ 2:5. Solve for x .



B) $MN : MO$ is 3:4



Geometric Mean	

EX 7: Find the geometric mean of the following numbers.

a) 5, 8

b) 12, 24

c) 5, 100

Problem Solving in Geometry with Proportions

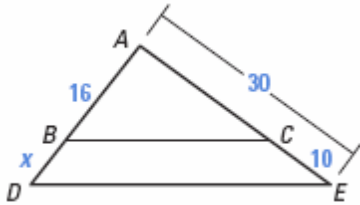
NOTES 6.2

Objective: Use properties of proportions.

<p>If $\frac{a}{b} = \frac{c}{d}$, then $\frac{a}{c} = \frac{b}{d}$</p>	<p>If $\frac{a}{b} = \frac{c}{d}$, then $\frac{a+b}{b} = \frac{c+d}{d}$</p>
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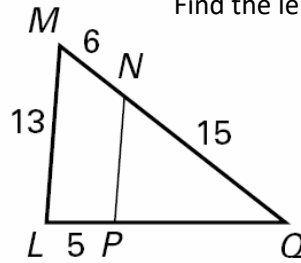
EX 1: In the diagram $\frac{AB}{BD} = \frac{AC}{CE}$.

Find the length of BD.

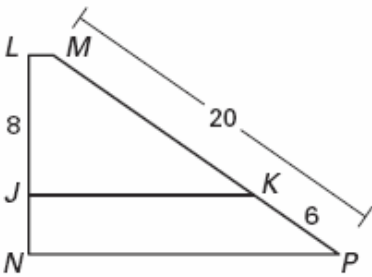


EX 2: In the diagram $\frac{MQ}{MN} = \frac{LQ}{LP}$.

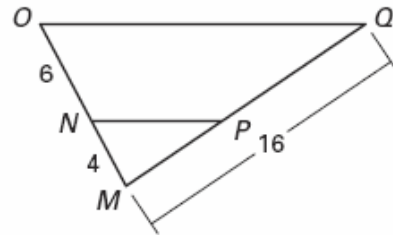
Find the length of LQ.



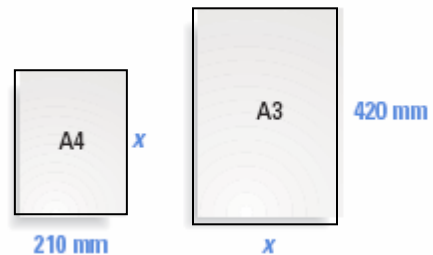
EX 3: Given: $\frac{LJ}{JN} = \frac{MK}{KP}$, find JN.



EX 4: Given: $\frac{MN}{NO} = \frac{MP}{PQ}$, find PQ.



EX 5: International standard paper sizes are commonly used all over the world. The various sizes all have the same width-to-length ratios. Two sizes of paper are shown, called A4 and A3. Find the value of x.



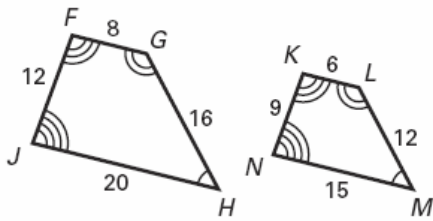
EX 6: A scale model of the Titanic is 107.5 inches long and 11.25 inches wide. The Titanic itself was 882.75 feet long. How wide was it?

EX 7: You are building a scale model of your uncle's fishing boat. The boat is 62 ft long and 23 ft wide. The model will be 14 inches long. How wide should it be?

Similar Polygons

Notes 6.3

Similar Polygons

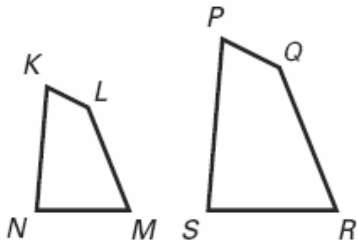


Corresponding angles are:

Corresponding sides are:

EX 1: Using Similarity Statements.

These 2 quadrilaterals are similar



Write Similarity Statements:

A) Pentagon JKLMN and STUVW are similar.

Draw a sketch (JKLMN is larger)

List all the pairs of congruent angles.

Write the ratios of the corresponding sides in a statement of proportionality.

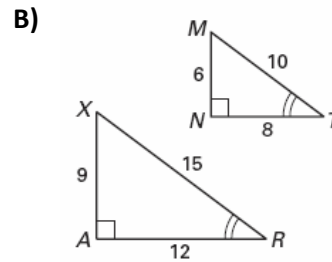
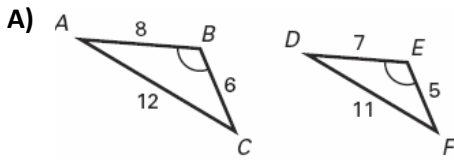
B) $ABCD \sim PQRS$. Draw a sketch (ABCD is larger)

List all pairs of congruent angles.

Write the statement of proportionality.

EX 2: Comparing Similar Polygons.

Decide if the figures are similar. (are all pairs of angles congruent? Are all pairs of sides proportional?)
 If the figures ARE similar, write a similarity statement.



EX 3: Comparing Photographic Enlargements

A) You have been asked to create a poster to advertise a field trip to see the Liberty Bell. You have a 3.5 in. by 5 in. photo that you want to enlarge. You want the enlargement to be 16 in. wide. How long will it be?

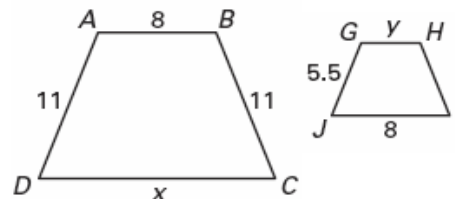
B) You have a photo 4 in. wide by 6 in. long that you want to reduce to fit in a frame that is 1.5 in. wide. How long will the reduced photo be?

Scale Factor	
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Perimeters of Similar Polygons	
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EX 4: Using Similar Polygons $ABCD \sim GHIJ$.

A) a. Find the scale factor of $ABCD$ to $GHIJ$.



b. Find the scale factor of $GHIJ$ to $ABCD$.

c. Find the values of x and y .

d. Find the ratio of the perimeter of $ABCD$ to the perimeter of $GHIJ$.

Similar Triangles

Notes 6.4

Objective: Identify similar triangles.

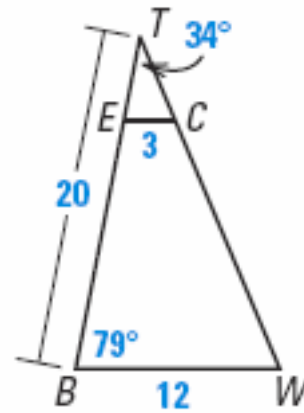
<p>AA SIMILARITY POSTULATE</p>		
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EX 1: In the diagram, $\triangle BTW \sim \triangle ETC$.

Write a statement of proportionality.

Find the $m\angle TEC$.

Find ET and BE.

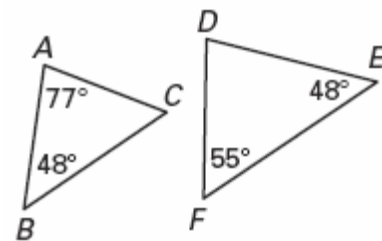


EX 2: Determine if the triangles are similar. If they can, write a similarity statement. If not, explain why.

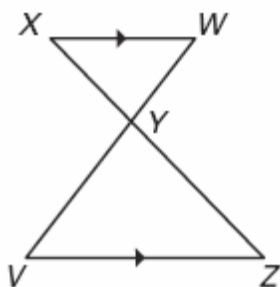
A.



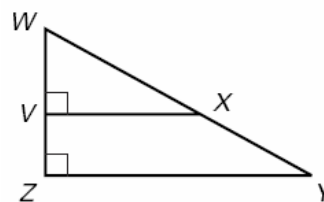
B.



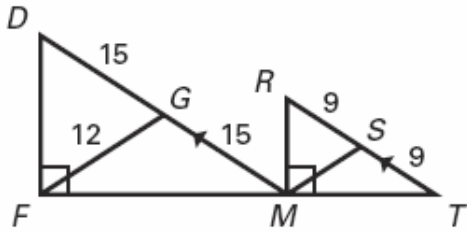
C.



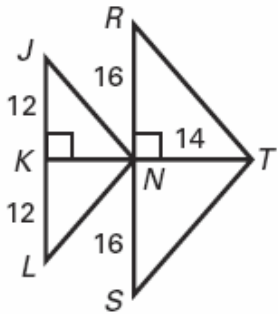
D.



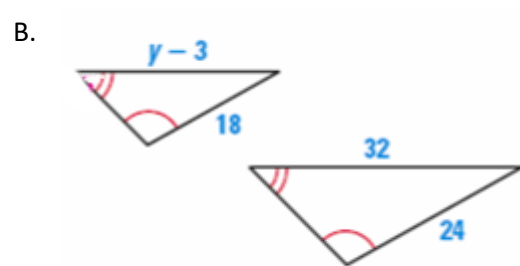
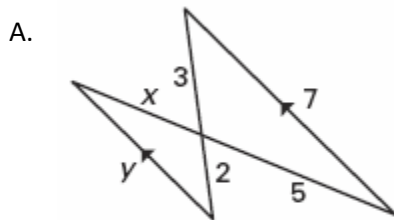
EX 3: Find the length of the altitude MS.



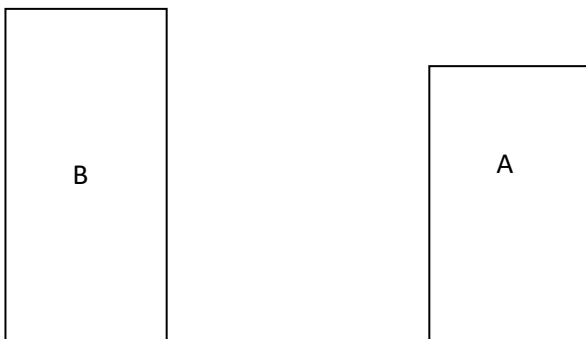
EX 4: $\triangle JNL \sim \triangle RTS$. Find the length of KN.



EX 5: The triangles are similar. Find the value of the variable.

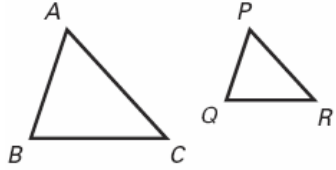
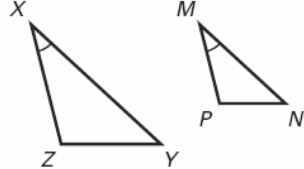


EX 6: You are standing 15 m from building A and 50 m from building B. Building A is 90 m tall. Find the height of building B.



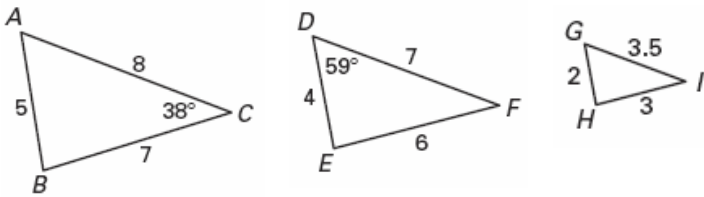
Proving Triangles are Similar

Notes 6.5

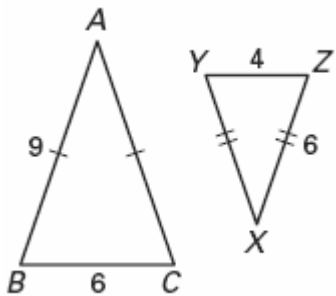
<p><u>Side-Side-Side Similarity Theorem</u> (SSS)</p> 	
<p><u>Side-Angle-Side Similarity Theorem</u> (SAS)</p> 	

EX 1: Determining Similarity.

A) Determine which two of the three triangles are similar. Find the scale factor for the pair.



B) By what method are the triangles similar?



EX 2: Logical Reasoning.

Draw a sketch of the description. Name the theorem that can be used to prove the triangles similar.

A) In $\triangle ABC$, $AC=5$, $BC = 20$, and $m\angle C = 80^\circ$. In $\triangle DEF$, $DF = 3$, $EF = 12$, and $m\angle F = 80^\circ$.

Draw sketch:

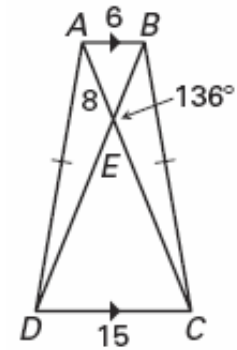
EX 3: Use the diagram to complete the statements.

a) $\triangle AEB \sim$ _____

b) $m\angle DEC =$

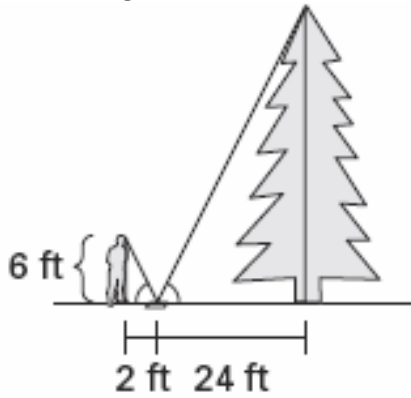
c) is $\triangle AED \sim \triangle BEC$?

d) $EC =$



EX 4: Using Similar Triangles.

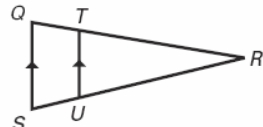
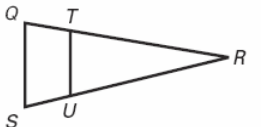
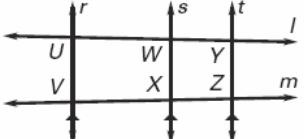
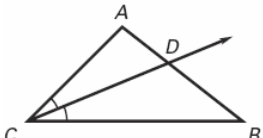
A) Find the height of the tree.



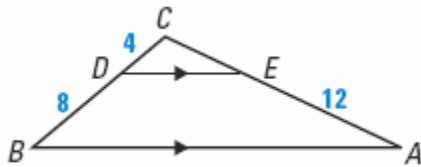
Proportions and Similar Triangles

Notes 6.6

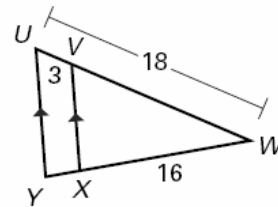
Objective: The learner will use proportionality theorems to calculate segment length.

<p>THEOREM 8.4 Triangle Proportionality</p>		
<p>Converse of 8.4</p>		
<p>THEOREM 8.6</p>		
<p>THEOREM 8.7</p>		

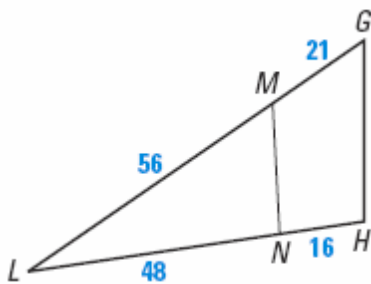
EX 1: Find the length of EC.



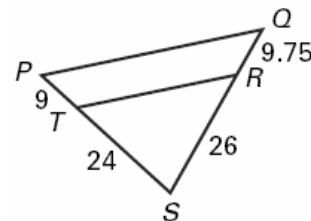
EX 2: Find the length of YX.



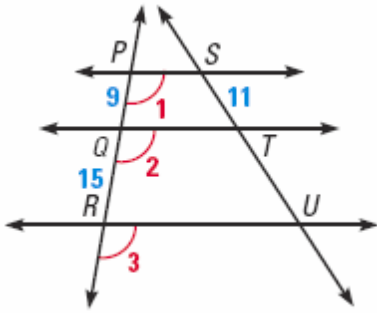
EX 3: Determine whether $MN \parallel GH$.



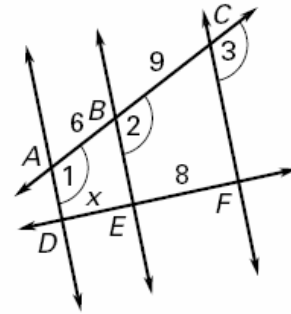
EX 4: Determine whether $PQ \parallel TR$.



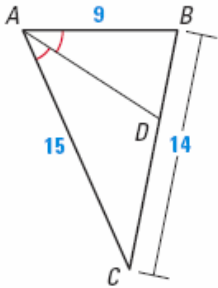
EX 5: What is the length of TU?



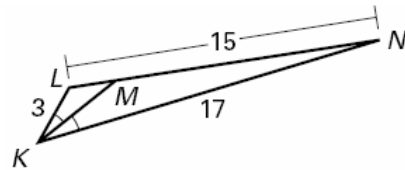
EX 6: What is x?



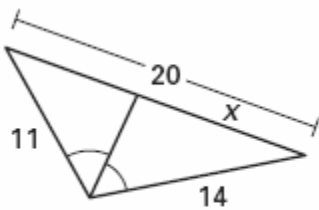
EX 7: Find the length of DC.



EX 8: Find the length of MN.



EX 9: Find the value of the x.



EX 10: Find the value of the variables.

