IM2 Ch.2 Review#2 Name _____ Period _____

SHOW ALL WORK!

1. Determine if the three given values can be lengths of the sides of a triangle**. EXPLAIN** why or why not.

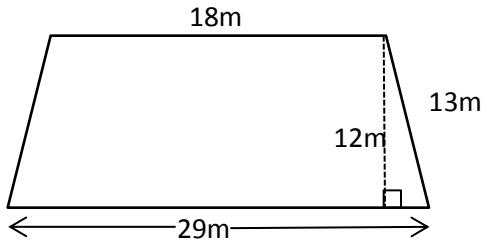
a) 12, 5, 7
Circle correct answer. YES or NO
EXPLANATION

b) 11, 7, 16
Circle correct answer. YES or NO
EXPLANATION

2. If the two given lengths are sides of a triangle, determine the range of possible values for the third side.

20 and 12 Third side must be longer than _____ and shorter than _____

3. Find the perimeter and area of the given trapezoid. **Figure is not drawn to scale**.
Hint: Use Pythagorean Theorem to find missing dimensions.



Perimeter:_____

Area:_____

4. Solve the equation below for x. Show work!

a) $-5(x + 2) = x + 8$

b) $4(3x – 4) = 22 – 2(x + 5)$

x = _____

x = _____

5. Write the CONVERSE of the following conditional statement. Assume this statement is true.

Conditional Statement: If it is snowing, then it is cold outside.

Converse: _____

Is the converse a true statement? Circle the correct answer. YES or NO

If the converse is false, provide a counter-example: _____

Solutions:

NO: It could be cold outside and windy or raining, but not necessarily snowing.				
NO: If 5 and 7 are two sides of a triangle the third side must be between 2 and 12. Since the third side is 12, a triangle cannot be formed.				
YES: If 11 and 7 are two sides of a triangle the third side must be between 4 and 18. Since the third side is 16, a triangle can be formed.				
If it is cold outside, then it is snowing.				
$282m^2$	$x = -3$	$x = 2$	$60 + \sqrt{180} \approx 73.42m$	Longer than 8 and shorter than 32.

6. Fill in the missing dimensions and find the areas of each of the following.

a)

7		
	x^2	5x

_____ = _____
Product Sum

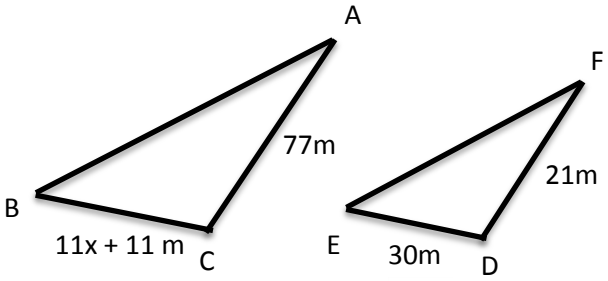
b)

2		8y	
	$5x^2$		-15x
	x		

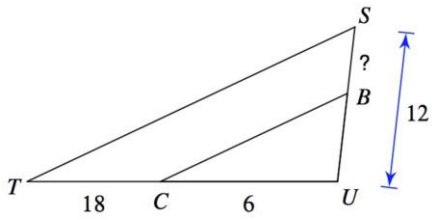
_____ = _____
Product Sum

7. Use proportions to solve for x:

a)

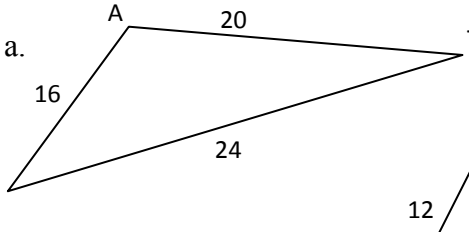


b)



8. Determine if each of the triangle pairs are similar. If similar, complete the similarity statement and write the similarity conjecture that you used. If the triangles are not similar, then state why not. Show all proportions used. NOTE: Figures may not be drawn to scale.

a.

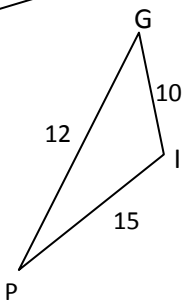


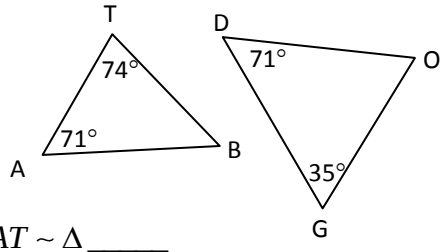
$\Delta CAT \sim \Delta$_____

Similarity Conjecture:_____

Justification:

b.



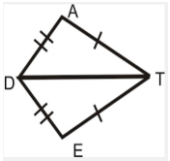


$\Delta BAT \sim \Delta$_____

Similarity Conjecture:_____

Justification:

9. Use a flowchart proof to show that $\angle A \cong \angle E$

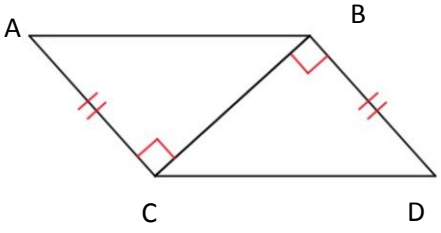


Check solutions:

$(5x+2)(x+4y-3) = 5x^2 + 20xy - 13x + 8y - 6$		
$(x+5)(x+7) = x^2 + 12x + 35$	$\overline{BS} = 9$	$x = 9$
Not Similar, side ratios not =	$\Delta BAT \sim \Delta GDO$ *by AA~*	

10. State the triangle congruence property that makes the pair of triangles congruent. If they are not necessarily congruent, write "not ≅" for the answer. Then write the congruency statement.

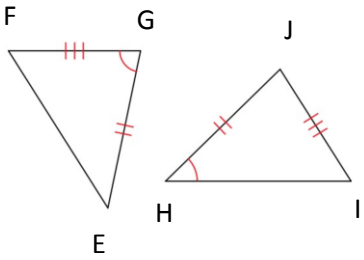
a)



_____

$\Delta ABC \cong$ _____

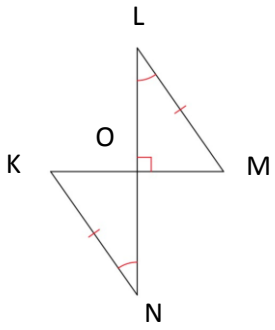
b)



_____

$\Delta FGE \cong$ _____

c)

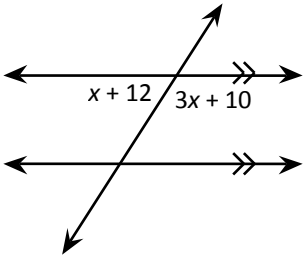


_____

$\Delta KON \cong$ _____

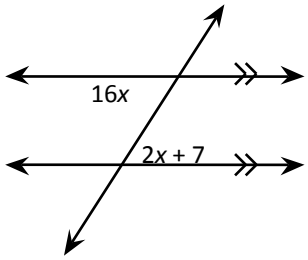
11. Write equations to find x. Justify the equations you wrote by stating the relationship between the angles.

a)



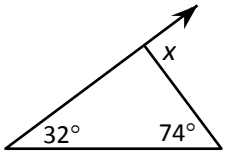
Reason:_____

b)



Reason:_____

c)



Reason:_____

12. Algebraically solve for x and y. Show work!

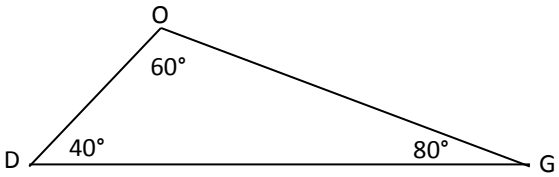
a) 9 = -4x + 9y
x = 3y – 6

Solution (,)

b) 3x + 7y = 1
3x + 4y = 7

Solution (,)

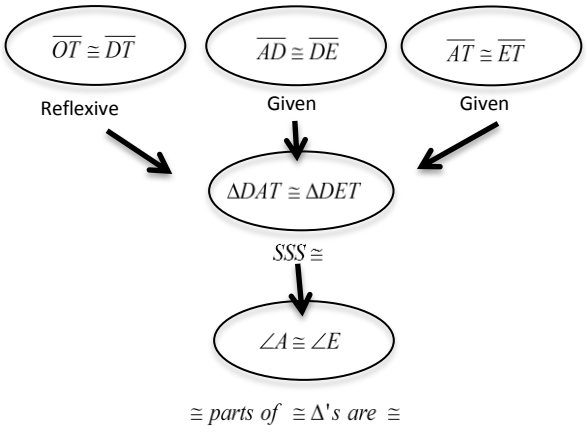
13. Using the given figure, identify (name) the longest, medium, and shortest side. Figure is not drawn to scale.



Longest side_____
Medium side _____
Shortest side _____

Solutions:

$SAS \cong$	ΔDCB	$x = 106°$	$(5, -2)$	ΔMOL	$AAS \cong$	*not* ☪
$x = \frac{1}{2}°$	$(9,5)$	$x = 39.5°$	$\overline{OD} = longest$	$\overline{DG} = medium$	$\overline{OG} = shortest$	
Parallel lines, therefore alternate interior angles are congruent.		Exterior Angle equals the sum of two remote interior angles		Linear pair (or straight angle) is supplementary, therefore adds to 180.		


$\overline{OT} \cong \overline{DT}$
$\overline{AD} \cong \overline{DE}$
$\overline{AT} \cong \overline{ET}$
Reflexive
Given
Given
$\Delta DAT \cong \Delta DET$
$SSS \cong$
$\angle A \cong \angle E$
$\cong$ parts of $\cong \Delta$'s are $\cong$