

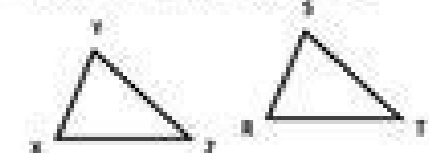
I'm not robot!

11262172.641975 204649036512 12308988 460430934 63362976780 15395578.833333 45520816.133333 119640566.2 38628347.444444 151454757456 23016511.382353 8396436.9777778 57178807.277778 14946024.018519 20023105.227273 64548738780 30570131.395349 47343669400 159785748.1 3847529336 5953310.0987654 96755718.736842 16806458.602041

Proving Triangles are Congruent

Complete the following proofs.

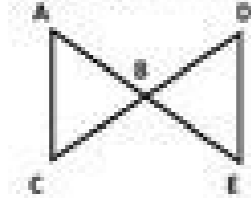
1. Given: $\overline{XY} \cong \overline{RS}$, $\angle Y \cong \angle S$, $\angle X \cong \angle R$



Prove: $\triangle XYZ \cong \triangle RST$

Statements	Reasons
1. $\overline{XY} \cong \overline{RS}$	1. Given
2. $\angle Y \cong \angle S$	2. Given
3. _____	3. _____
4. $\triangle XYZ \cong \triangle RST$	4. _____

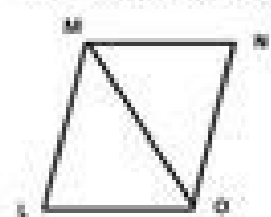
2. $\angle C \cong \angle D$, $\overline{CB} \cong \overline{DB}$



Prove: $\triangle ACB \cong \triangle EDB$

Statements	Reasons
1. $\overline{CB} \cong \overline{DB}$	1. _____
2. _____	2. Given
3. $\angle C \cong \angle D$	3. _____
4. $\triangle ACB \cong \triangle EDB$	4. ASA
5. _____	5. _____

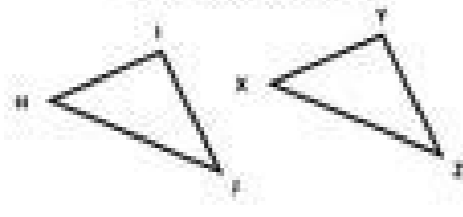
3. $\overline{EM} \cong \overline{NO}$, $\angle M \cong \angle O$



Prove: $\triangle EMO \cong \triangle NMO$

Statements	Reasons
1. _____	1. Given
2. _____	2. Given
3. $\overline{MO} \cong \overline{MO}$	3. _____
4. $\triangle EMO \cong \triangle NMO$	4. _____

4. $\overline{HI} \cong \overline{JK}$, $\angle I \cong \angle J$, $\angle H \cong \angle K$



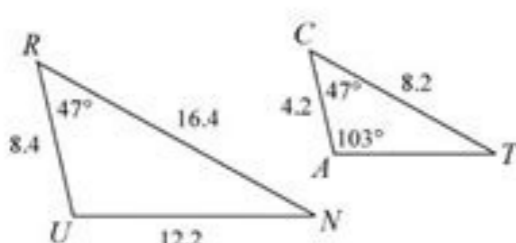
Prove: $\triangle HIJ \cong \triangle KJL$

Statements	Reasons
1. $\overline{HI} \cong \overline{JK}$	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. ASA

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3-86. Examine the triangles at right.

a. Are these triangles similar? If so, make a flowchart justifying their similarity. [Yes, by SAS ~. See flowchart below.]

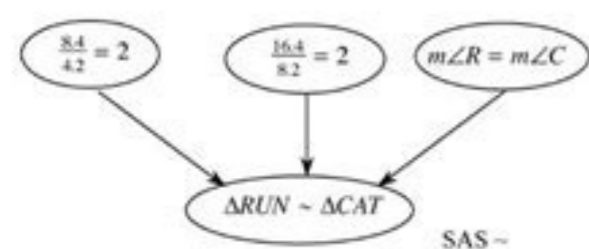


b. Charles has $\triangle CAT \sim \triangle RUN$ as the conclusion of his flowchart. Leesa has $\triangle NRU \sim \triangle TCA$ as her conclusion. Who is correct? Why? [Both are correct. In both namings, corresponding vertices of the two triangles occupied the same place in both triangle names.]

c. Are $\triangle CAT$ and $\triangle RUN$ congruent? Explain how you know. [No. The common ratio is not 1 (they are not the same size).]

d. Find all the missing side lengths and all the angle measures of $\triangle CAT$ and $\triangle RUN$. [$m\angle U = 103^\circ$, $m\angle N = 30^\circ$, $m\angle T = 30^\circ$, $AT = 6.1$]

Solution to part (a):



Name:	Date:									
Topic:	Class:									
Main Ideas/Goals/Items	Notes/Examples									
<p><i>Why not by ASA?</i></p> <p>TRIGONOMETRY?</p> <p>TRIGONOMETRIC RATIOS</p>	<p>Each acute angle of a right triangle has the following trigonometric ratios:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">SINE</td> <td style="padding: 5px;">The ratio of the leg opposite the angle to the hypotenuse.</td> <td style="padding: 5px;"> <ul style="list-style-type: none"> • $\sin A = \frac{\text{opposite}}{\text{hypotenuse}}$ • $\sin B = \frac{\text{opposite}}{\text{hypotenuse}}$ </td> </tr> <tr> <td style="padding: 5px;">COSINE</td> <td style="padding: 5px;">The ratio of the leg adjacent to the angle to the hypotenuse.</td> <td style="padding: 5px;"> <ul style="list-style-type: none"> • $\cos A = \frac{\text{adjacent}}{\text{hypotenuse}}$ • $\cos B = \frac{\text{adjacent}}{\text{hypotenuse}}$ </td> </tr> <tr> <td style="padding: 5px;">TANGENT</td> <td style="padding: 5px;">The ratio of the leg opposite the angle to the leg adjacent to the angle.</td> <td style="padding: 5px;"> <ul style="list-style-type: none"> • $\tan A = \frac{\text{opposite}}{\text{adjacent}}$ • $\tan B = \frac{\text{opposite}}{\text{adjacent}}$ </td> </tr> </table>	SINE	The ratio of the leg opposite the angle to the hypotenuse.	<ul style="list-style-type: none"> • $\sin A = \frac{\text{opposite}}{\text{hypotenuse}}$ • $\sin B = \frac{\text{opposite}}{\text{hypotenuse}}$ 	COSINE	The ratio of the leg adjacent to the angle to the hypotenuse.	<ul style="list-style-type: none"> • $\cos A = \frac{\text{adjacent}}{\text{hypotenuse}}$ • $\cos B = \frac{\text{adjacent}}{\text{hypotenuse}}$ 	TANGENT	The ratio of the leg opposite the angle to the leg adjacent to the angle.	<ul style="list-style-type: none"> • $\tan A = \frac{\text{opposite}}{\text{adjacent}}$ • $\tan B = \frac{\text{opposite}}{\text{adjacent}}$
SINE	The ratio of the leg opposite the angle to the hypotenuse.	<ul style="list-style-type: none"> • $\sin A = \frac{\text{opposite}}{\text{hypotenuse}}$ • $\sin B = \frac{\text{opposite}}{\text{hypotenuse}}$ 								
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<p>REMEMBER!!</p>										
<p>EXAMPLES</p>	<p>Directions: Give each trigonometric ratio as a fraction in simplest form.</p> <p>1. <ul style="list-style-type: none"> • $\sin A = \frac{12}{12} = 1$ • $\cos A = \frac{12}{12} = 1$ • $\tan A = \frac{12}{12} = 1$ <ul style="list-style-type: none"> • $\sin C = \frac{12}{12} = 1$ • $\cos C = \frac{12}{12} = 1$ • $\tan C = \frac{12}{12} = 1$ </p> <p>2. <ul style="list-style-type: none"> • $\sin B = \frac{3}{5}$ • $\cos B = \frac{4}{5}$ • $\tan B = \frac{3}{4}$ <ul style="list-style-type: none"> • $\sin X = \frac{4}{5}$ • $\cos X = \frac{3}{5}$ • $\tan X = \frac{4}{3}$ </p> <p>3. <ul style="list-style-type: none"> • $\sin L = \frac{16}{38} = \frac{8}{19}$ • $\cos L = \frac{34}{38} = \frac{17}{19}$ • $\tan L = \frac{16}{34} = \frac{8}{17}$ <ul style="list-style-type: none"> • $\sin M = \frac{34}{38} = \frac{17}{19}$ • $\cos M = \frac{16}{38} = \frac{8}{19}$ • $\tan M = \frac{34}{16} = \frac{17}{8}$ </p>									

