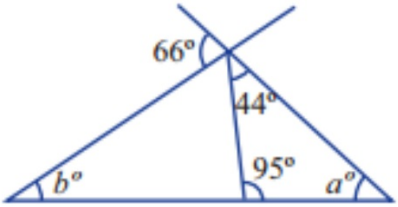
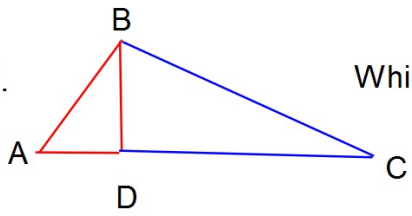
Do Now

Turn in your HW
Chromebooks (keep it closed)

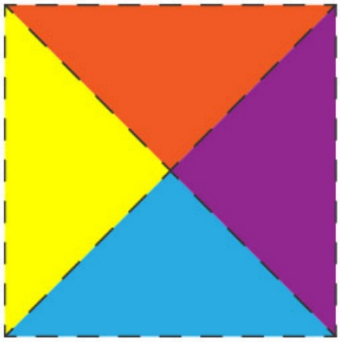
1. **Find the angle "a" and "b"**



2. 

Which side do the two triangles have in common?

Congruent Triangles



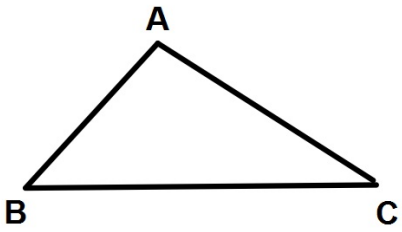
1

2

3

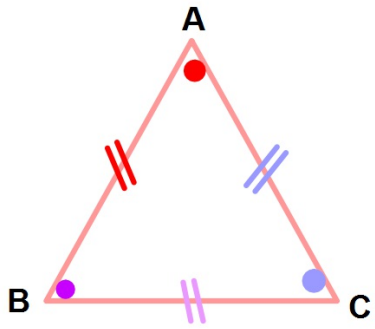
4

5



For us to prove that 2 people are identical twins, we don't need to show that all "2000" body parts are equal. We can take a short cut and show 3 or 4 things are equal such as their face, age and height. If these are the same I think we can agree they are twins. The same is true for triangles. We don't need to prove all 6 corresponding parts are congruent. We have 5 short cuts or methods.

Definition of included angle and included side



Rule 1

Rule 2

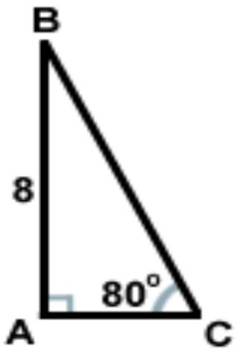
Example 1:

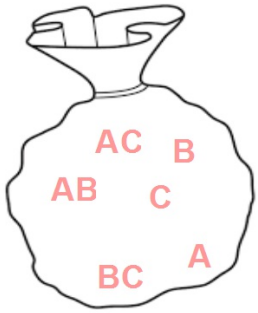
What is the angle included between sides BC and AC ?

What is the side included between angles A and B?

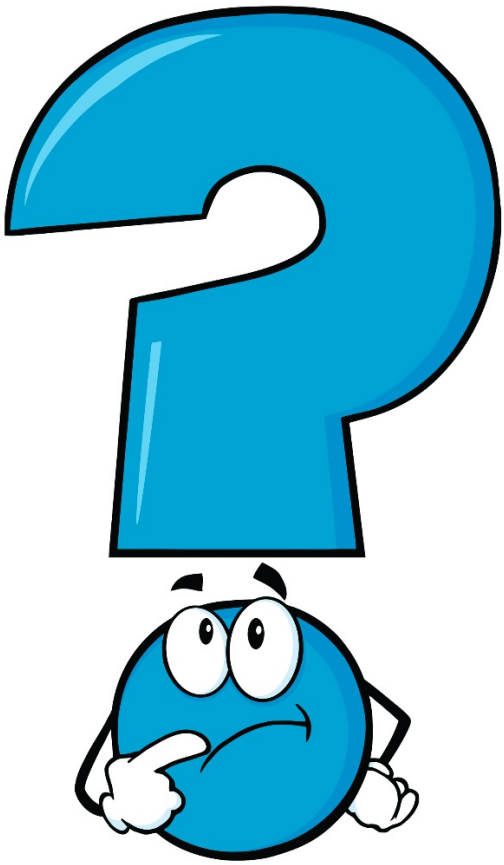
What is the angle included between sides AB and BD?

What is the side included between angles B and C?





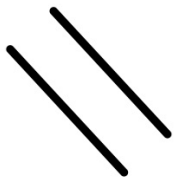
What is congruence?



Congruence is being exactly equal in size and shape.

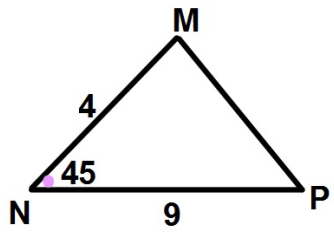
Example:

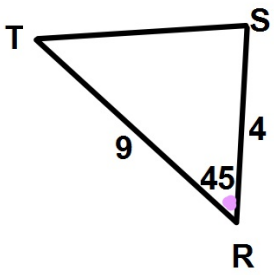
Two sides are congruent if they have exactly the same length.

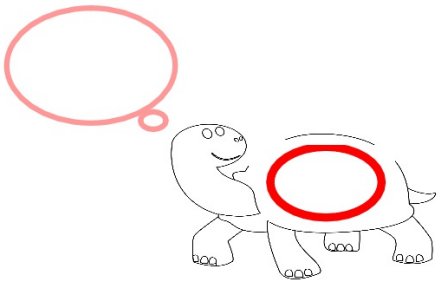


Two angles are congruent if they have the same measure.

SAS Theorem:







MN is equal to

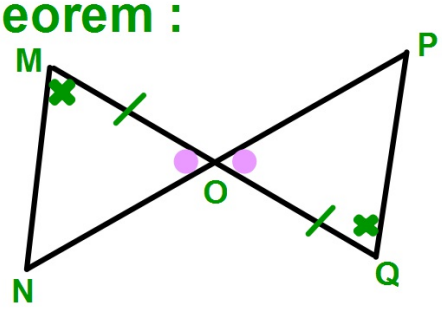
NP is equal to

Angle $\hat{M}NP$ is equal to

What can we say about angle $\hat{M}NP$

Rule 3:

ASA Theorem :



MO is equal to

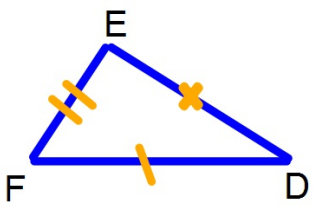
$\hat{NMO}$ is equal to

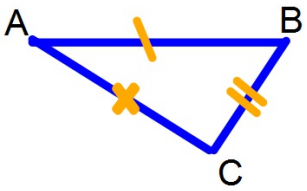
MON is equal to

use magic ink to see the answer

Rule 4:

SSS Theorem:

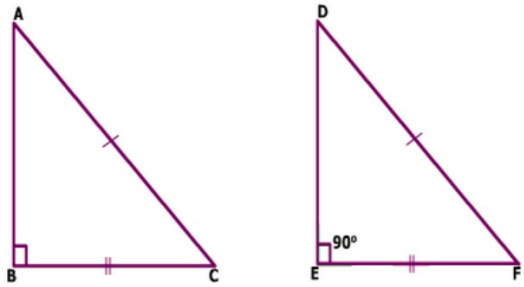




AB = FD
BC = EF
FD = AB

Rule 5:

RHS Theorem:



AC is equal to DF / DE

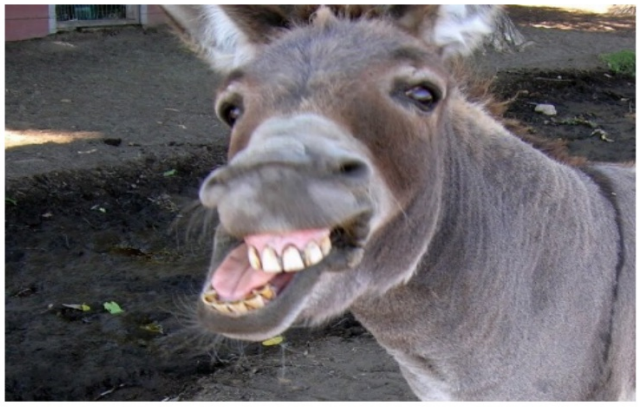
BC is equal to DF / EF

$\hat{A}BC = \hat{D}EF = 90^\circ / 180^\circ$

Rule 6:

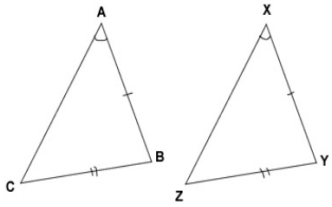
There is no AAA postulate.

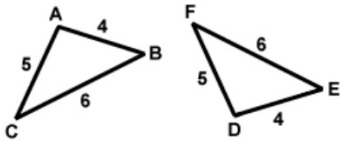
There is no SSA postulate:

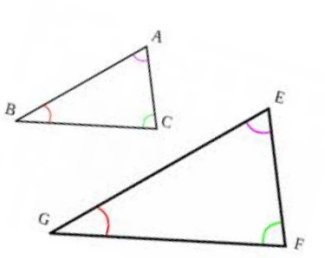


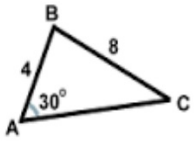
Example 2:

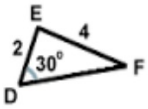
Move the congruent triangles to the right side

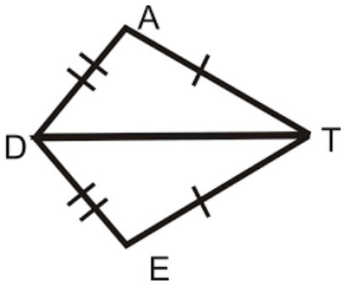


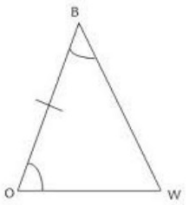


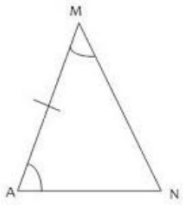




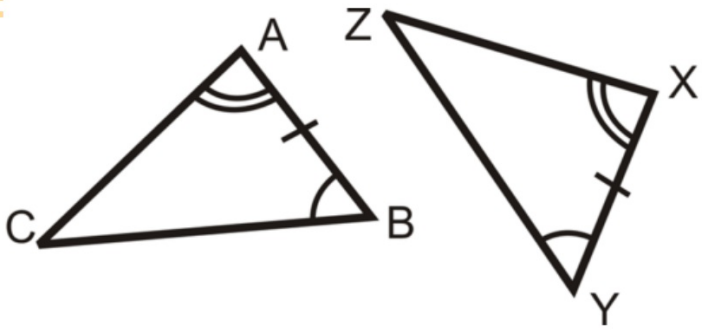






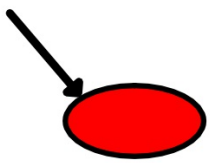


Example 3:

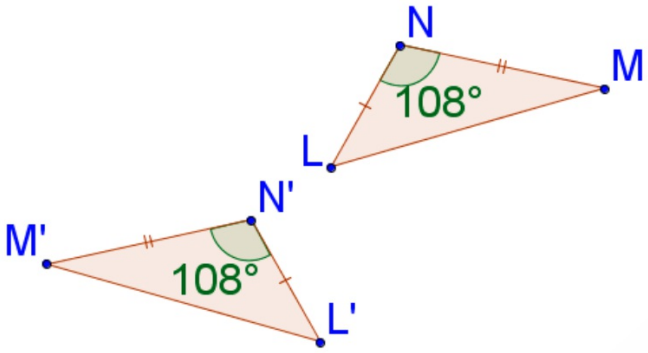


In the figure above, the two triangles are congruent by:

To see the answer fill the circle with black color



Example 4:

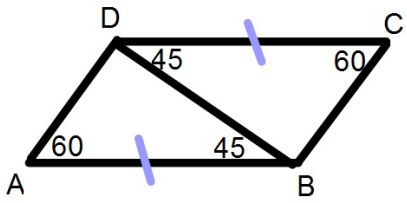


In the figure above, the two triangles are congruent by:

To see the answer fill the circle with black color.

Example 5:

Which two triangles in the adjacent figure are congruent? why?



Lottery Wednesday!

Kahoot!

1. You may use your phones or Chromebooks.
2. Your first name and last initial!
3. 10 questions.
4. Let's have fun!

According to the RHS criterion of congruence, two right angles triangles are said to be congruent to each other if one leg and hypotenuse of one are equal to the corresponding leg and hypotenuse of the other. It is so because given one leg and the hypotenuse, a unique right angled triangle can be drawn.

In right angled triangles LMN and XYZ

$\angle LMN = \angle XZY$

Side MN = Side YZ

Hyp LN = Hyp XY

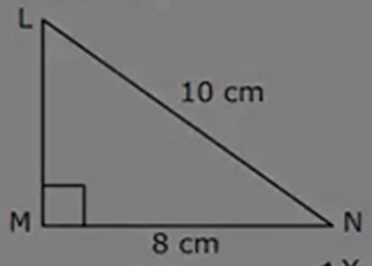
L ⟷ X

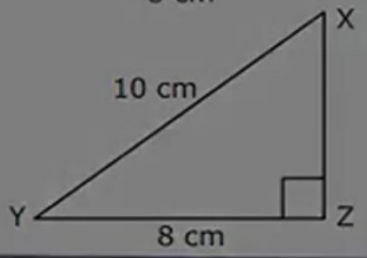
M ⟷ Z

N ⟷ Y

Therefore,

$\Delta LMN \cong \Delta XZY$





Exit Ticket!

Test yourself:

The four congruence statements that can be used to prove congruency are: _____

The two congruence statements that cannot be used to prove congruency are: _____

Stop & Jot: Write a letter to an absent student explaining what it means for two triangles to be congruent. How can the absent student decide by looking at a triangles whether they are congruent? Words to include are: congruent, triangle, statement, side, angle, corresponding.

Kahoot! Congruent Triangles!!

https://play.kahoot.it/#/?quizId=efb25033-9bab-43d1-8445-4884b63382e5

1. You can use your phone only during this activity