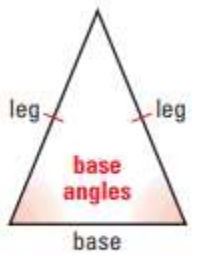


WHAT IS AN ISOSCELES TRIANGLE??



Isosceles Triangle

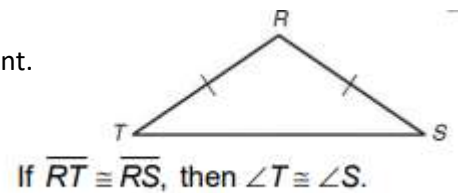
The congruent sides of an isosceles triangle are called **legs**.

The other side is called the **base**.

The two angles at the base of the triangle are called the **base angles**.

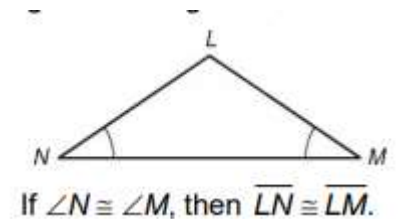
Isosceles Triangle Theorem

If two sides of a triangle are congruent, then the angles opposite them are congruent.

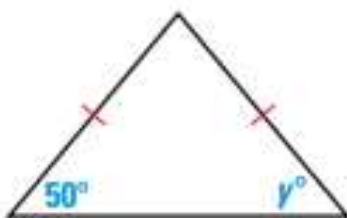


Converse of the Base Angles Theorem

If two angles of a triangle are congruent, then the sides opposite them are congruent.



Ex 1) Find the value of y.

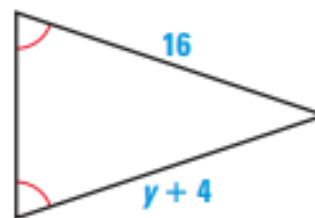


The triangle is an isosceles triangle with two sides congruent. We also know that the opposite angles are also congruent.

$$\angle 50^\circ \cong \angle y^\circ$$

$$\angle y^\circ = 50^\circ$$

Ex 2) Find the value of y.



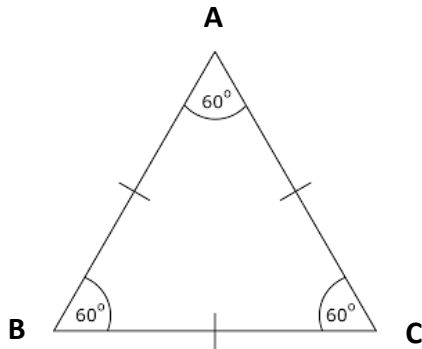
The triangle is an isosceles triangle with two angles congruent. We also know that the opposite sides are also congruent.

$$16 = y + 4 \quad \text{Solve for } y$$

$$y = 12 \quad \text{Check your work – } 12 + 4 = 16$$

The sides are congruent!

WHAT IS AN EQUILATERAL TRIANGLE??

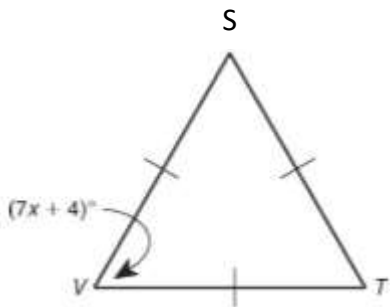


If a triangle is equilateral, then it is also equiangular.

If a triangle is equiangular, then it is also equilateral.

If $\angle A \cong \angle B \cong \angle C$, then $\overline{AB} \cong \overline{BC} \cong \overline{CA}$.

Ex 3) Find x in $\triangle STV$.



Equilateral $\triangle \rightarrow$ equiangular \triangle

The measure of each \angle of an equiangular \triangle is 60° .

$$7x + 4 = 60$$

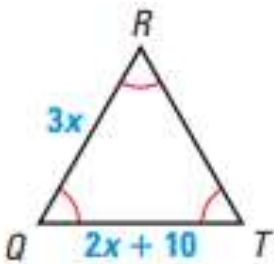
$$7x = 56$$

$$x = 8$$

Check your work – $7(8) + 4 = 56 + 4 = 60$

The angle is equal to $60!$

Ex 4) Find the length of each side.



Equilateral $\triangle \rightarrow$ equiangular \triangle

All sides are congruent.

$$3x = 2x + 10$$

$$x = 10$$

Check your work – $3(10) = 30$

$$- 2(10) + 10 = 30$$

The sides are congruent!