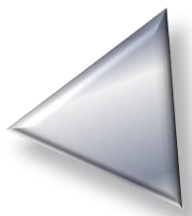


The background of the slide is a complex, abstract pattern composed of numerous overlapping triangles. These triangles are filled with iridescent, shimmering colors that range from pale yellows and whites to soft blues and purples, creating a mosaic-like effect. The text is centered over this pattern.

Isosceles and Equilateral Triangles

Section 5.4



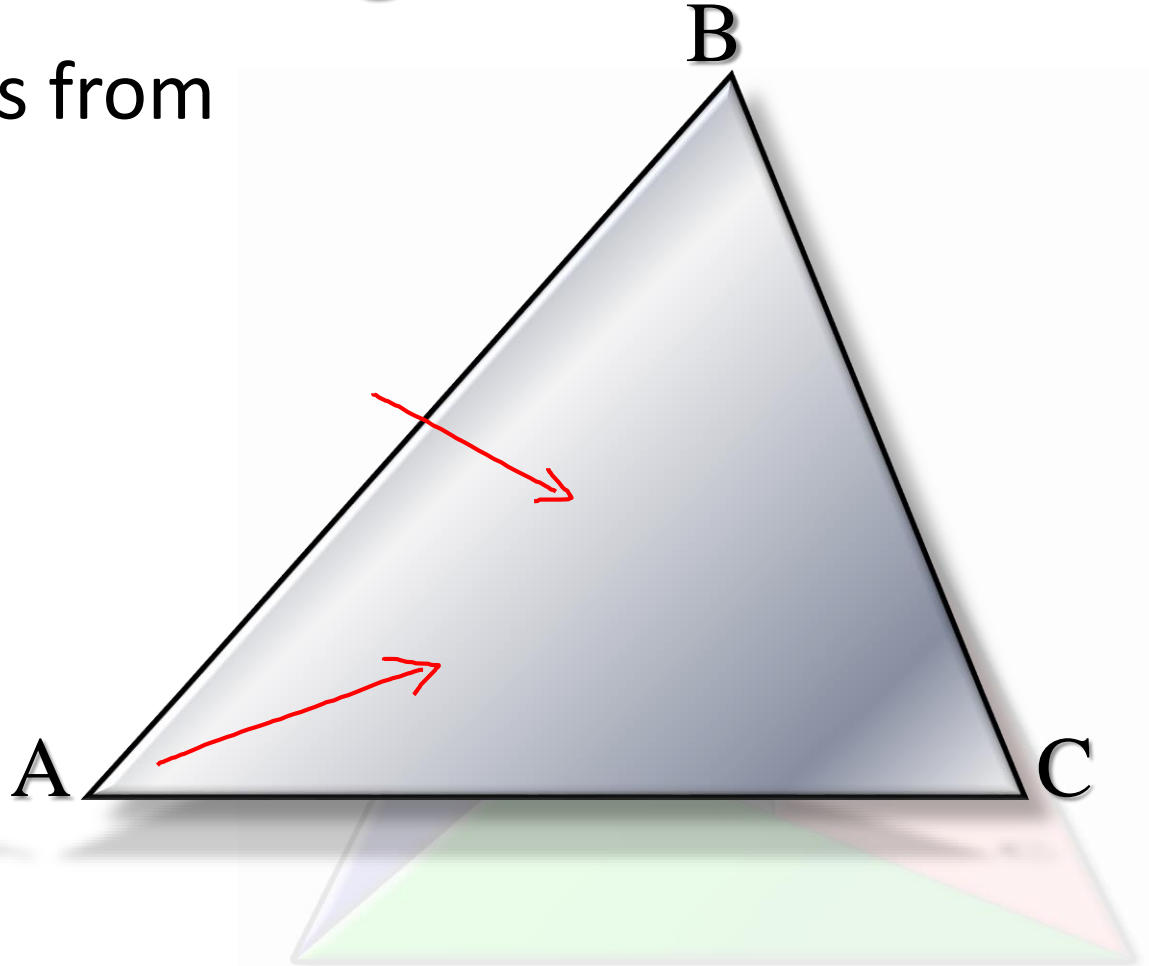
Triangles

- **Opposite** – Across from

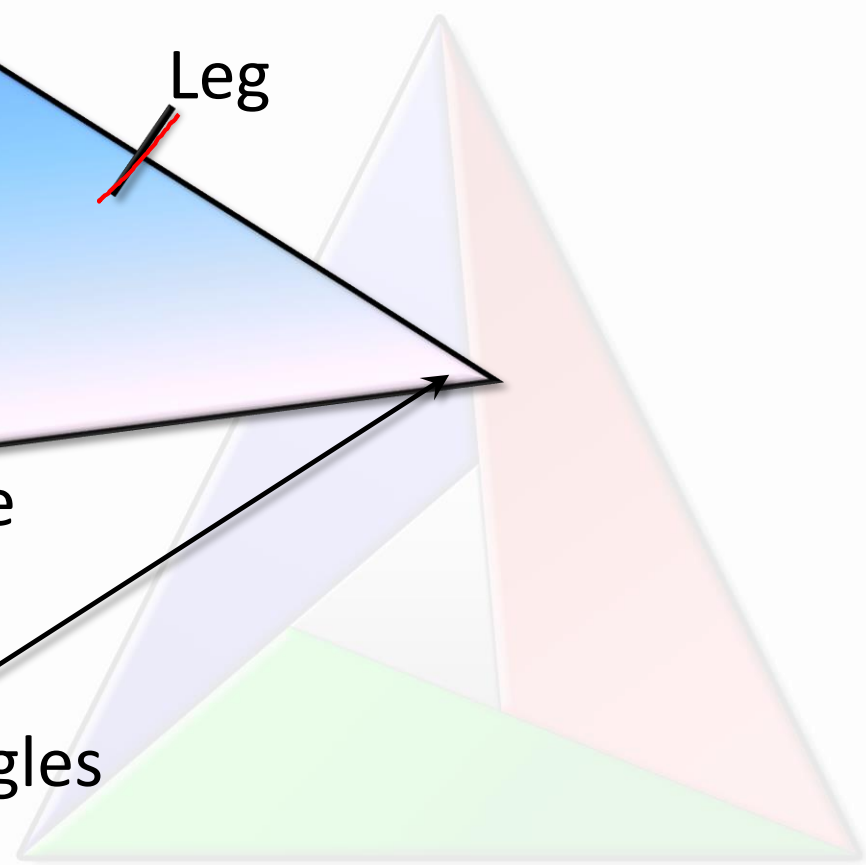
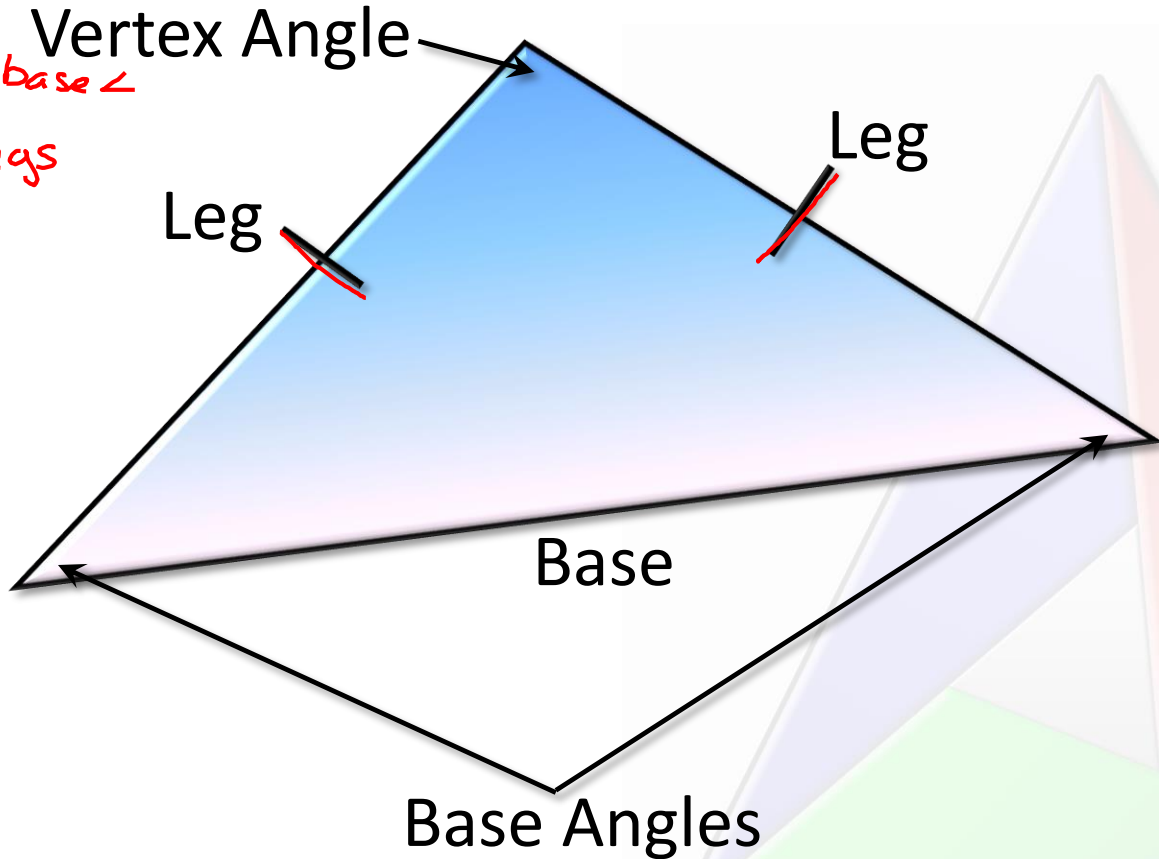
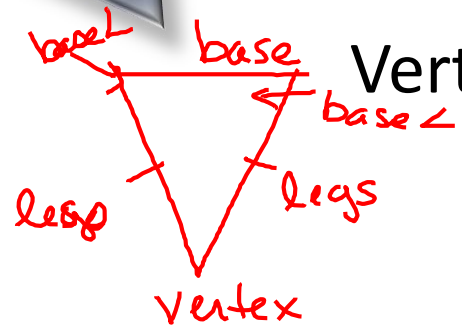
Example

Side opposite $\angle A$ is \overline{BC}

Angle opposite \overline{AB} is $\angle C$



Isosceles Triangle Anatomy

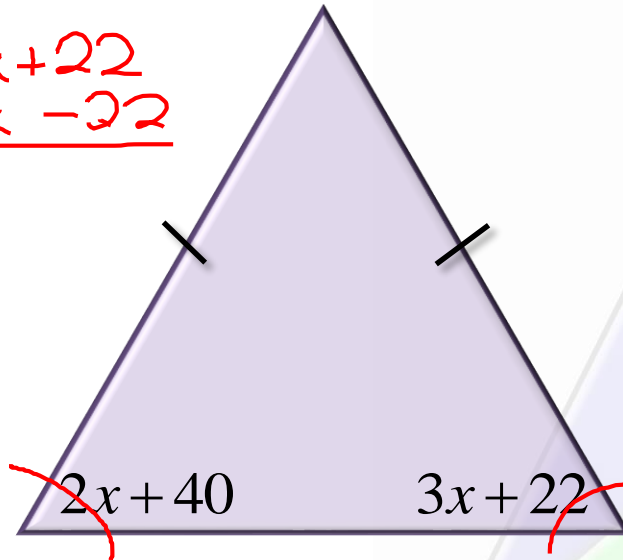




Base Angles Theorem

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

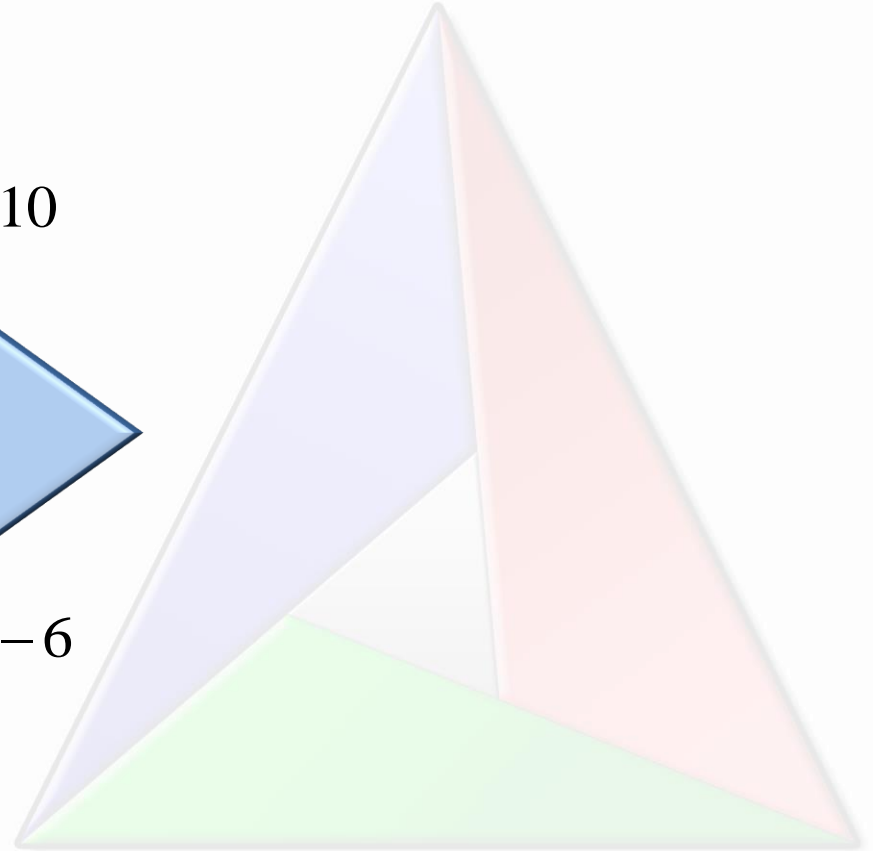
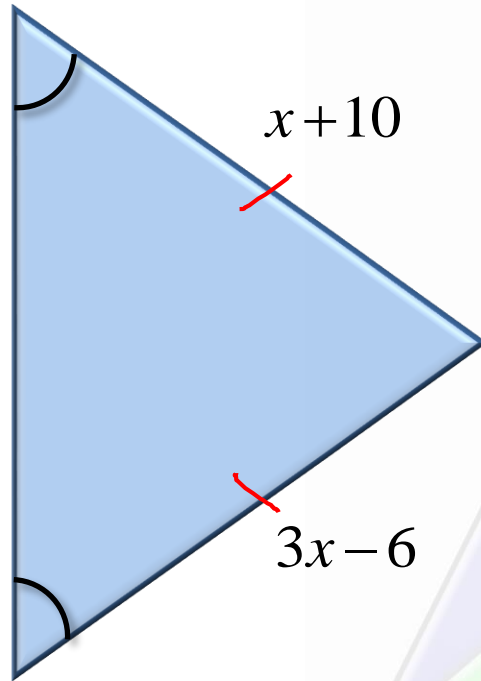
$$\begin{array}{r} 2x + 40 = 3x + 22 \\ - 2x \quad - 22 \quad - 2x \quad - 22 \\ \hline 18 = x \end{array}$$



Converse of Base Angles Theorem

- The converse is also true!

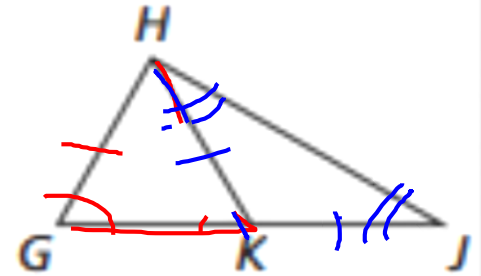
$$\begin{array}{r} x+10 = 3x-6 \\ -x+6 \quad -x+6 \\ \hline 16 = 2x \\ 8 = x \end{array}$$



Example

Copy and complete the statement.

1. If $\overline{HG} \cong \overline{HK}$, then $\angle \underline{G} \cong \angle \underline{GKH}$
2. If $\angle KHJ \cong \angle KJH$, then $\underline{HK} \cong \underline{KJ}$.



 Name what sides or angles must be congruent with the given information.

$$\overline{NL} \cong \overline{SL}$$

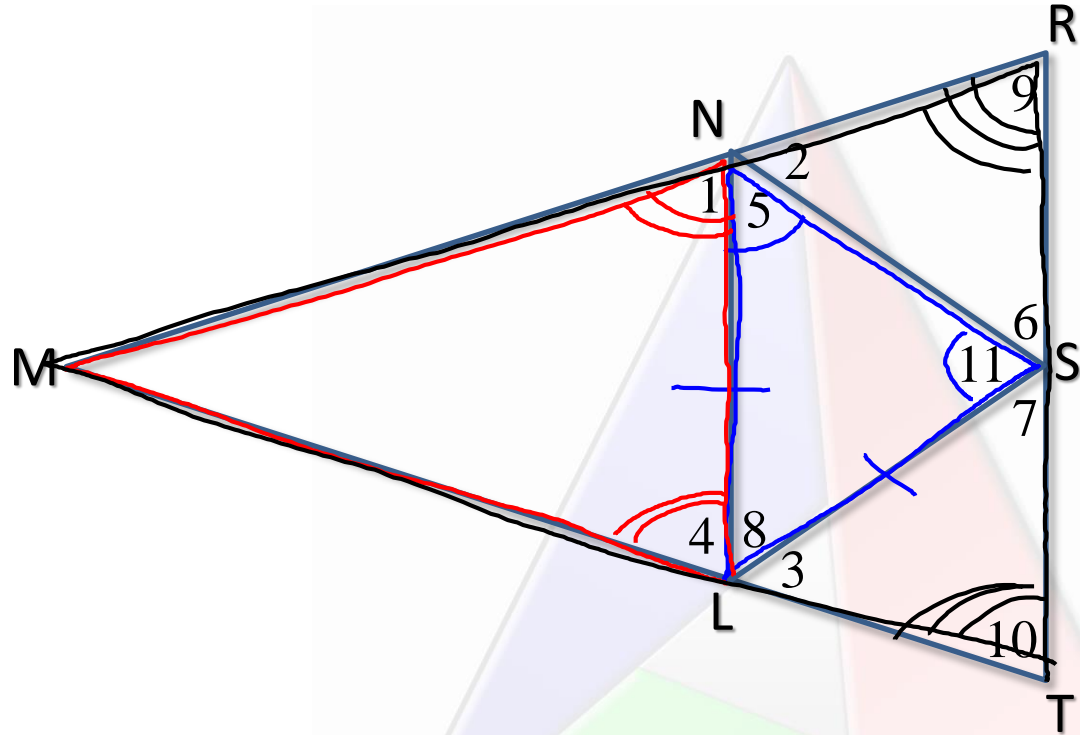
$$\angle 5 \cong \angle 11$$

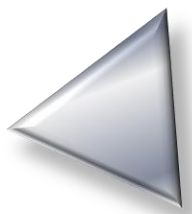
$$\angle 1 \cong \angle 4$$

$$\overline{MN} \cong \overline{ML}$$

$$\angle 9 \cong \angle 10$$

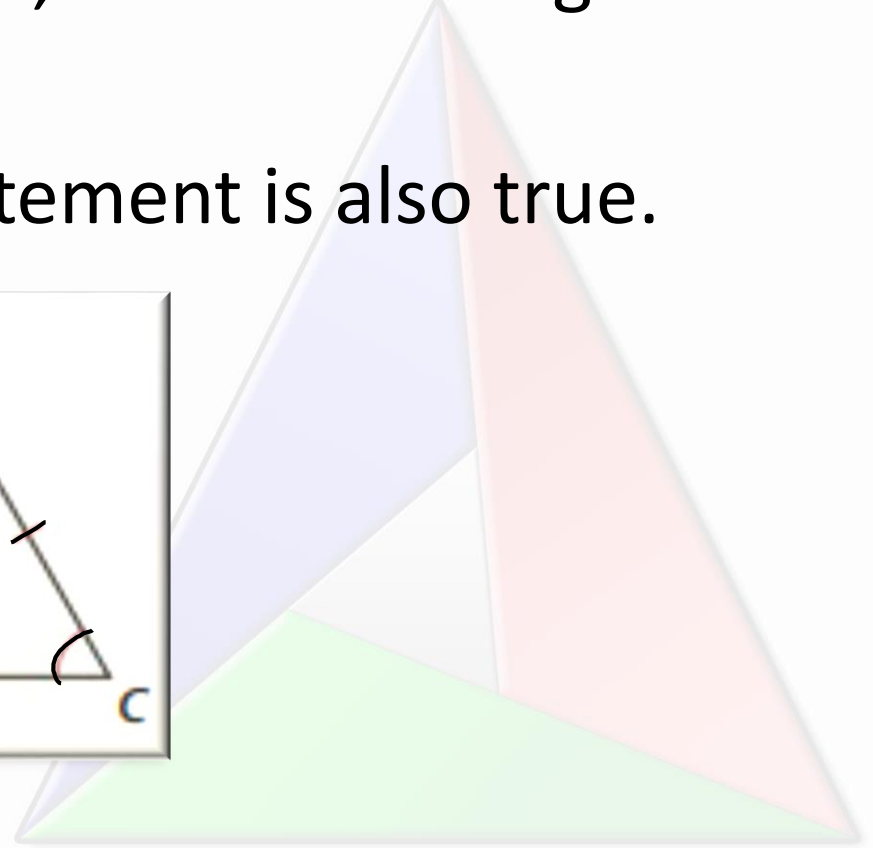
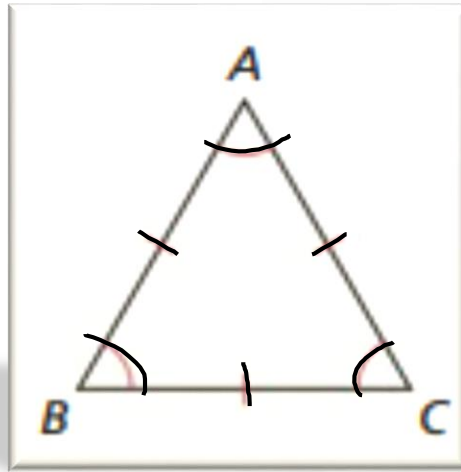
$$\overline{MR} \cong \overline{MT}$$





Corollary to Base Angles Thm.

- If a triangle is equilateral, then the triangle is equiangular.
- The converse of this statement is also true.



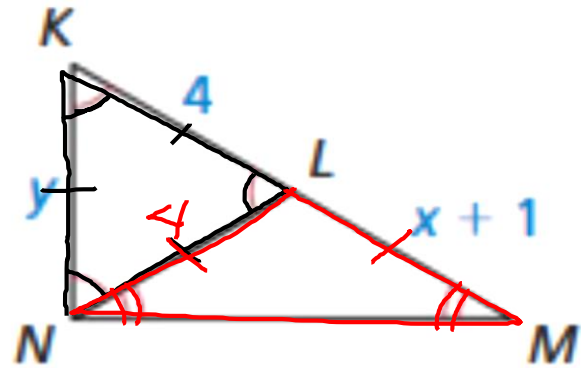
Example

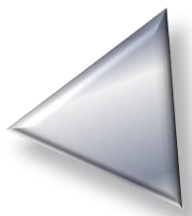
Find the values of x and y in the diagram.

$$y = 4$$

$$x + 1 = 4$$

$$x = 3$$





Lesson 5.4 p.256; 3-16, 23-24, 42-44

