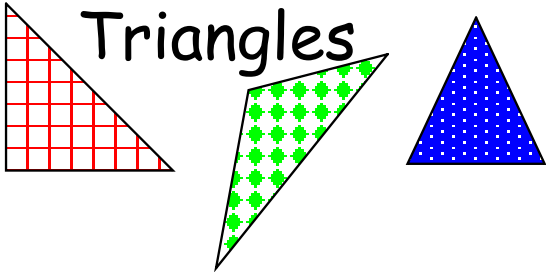


Classifying Triangles

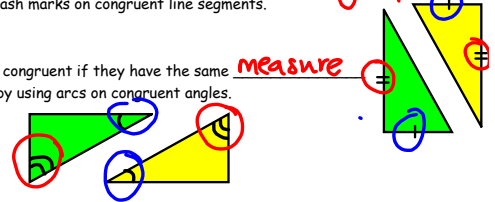


What is Congruent?

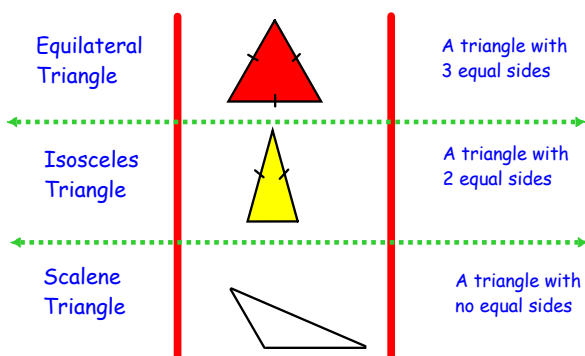
- The symbol for congruence is \cong

- Two line segments are congruent if they have the same length and it is shown by using hash marks on congruent line segments.

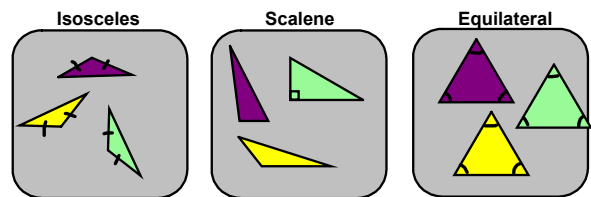
- Two angles are congruent if they have the same measure and it is shown by using arcs on congruent angles.



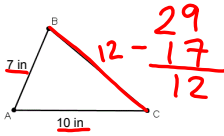
Classified by the lengths of their sides



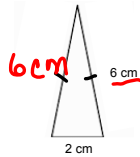
Identify each Triangle as Isosceles, Scalene, or Equilateral.



Find the missing side lengths and classify the triangle by its sides.



Sum of all sides: 29 in
 Missing side length: 12 in
 Type of triangle: scalene



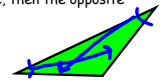
Missing side length: 6 cm
 Type of triangle: isosceles

Congruent Sides and Angles

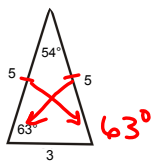
- If two sides in a triangle have the same length (isosceles), then the opposite angles have the same measure.
 (add the appropriate markings to show congruence)



- If two angles in a triangle have the same measure, then the opposite sides have the same lengths.
 (add the appropriate markings to show congruence)

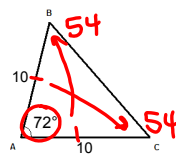


Find the missing angle measures.



Missing angle measure: 63°
 Type of triangle: isosceles

$$\begin{array}{r} 180 \\ - 72 \\ \hline 108 \div 2 = \end{array}$$

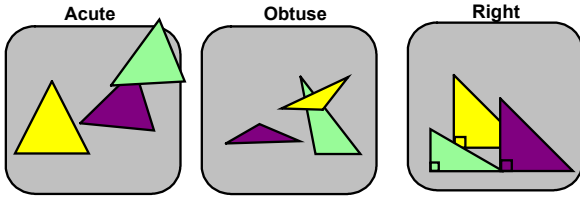


Sum of all angles: 180
 Missing angle measure: 54°
 Type of triangle: isosceles

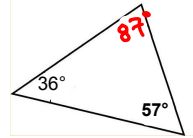
Classified by the measure of their angles

Right Triangle		A triangle with a right angle
Acute Triangle		A triangle with 3 acute angles
Obtuse Triangle		A triangle with 1 obtuse angle

Identify each Triangle as Obtuse, Acute, or Right



Find the missing angle measures.



Sum of all angles: 180
Missing angle measure: 87°
Type of triangle: acute

$$\begin{array}{r} 180 \\ - 36 \\ - 57 \\ \hline 87 \end{array}$$

Handwritten algebraic work for finding missing angles:

$$3x + 1 + 2x + 39 = 180$$

$$5x + 40 = 180$$

$$5x = 140$$

$$x = 28$$

Other calculations shown:

$$2 \cdot 28 = 56$$

$$3(28) + 1 = 85$$

Final results for the second triangle:

Sum of all angles: 180
Missing angle measure: 85°
Type of triangle: acute

Matching!

- ✓ 1. C Angle measures: $30^\circ, 60^\circ, 90^\circ$ — A. Isosceles
- ✓ 2. E Side lengths: 2cm, 2cm, 2cm — B. Scalene
- ✓ 3. F Angle measures: $60^\circ, 60^\circ, 60^\circ$ — C. Right
- ✓ 4. A Side lengths: 6m, 3m, 6m — D. Obtuse
- ✓ 5. B Side lengths: 5ft, 7ft, 9ft — E. Equilateral
- ✓ 6. D Angle measures: $20^\circ, 125^\circ, 35^\circ$ — F. Equiangular