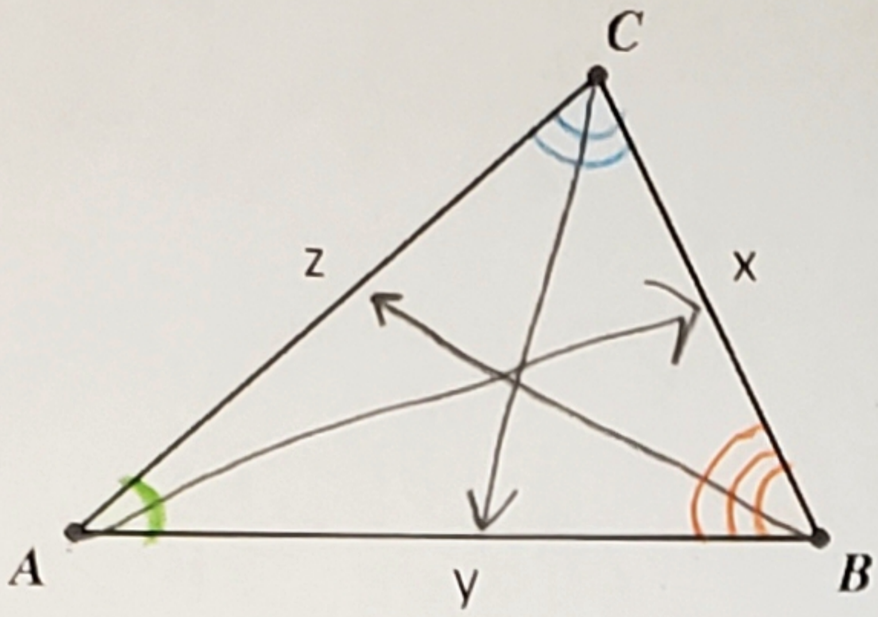
Name: _____

Date: _____ Per: ____

IM2 – (7.2b Notes) Similarity: Intro to Similar Triangles

Review

- Triangle Naming – Triangles can be named 6 different ways.
  - Start with any angle (vertex) letter, and name the triangle in either direction (clockwise or counterclockwise).



Angles

∠ A: ∠CAB, ∠BAC

∠ B: ∠CBA, ∠ABC

∠ C: ∠BCA, ∠ACB

Sides

x: $\overline{CB}$, $\overline{BC}$

y: $\overline{AB}$, $\overline{BA}$

z: $\overline{AC}$, $\overline{CA}$

Name the Above Triangle 6 Different Ways

△ ABC _____ △ ACB _____

△ BCA _____ △ BAC _____

△ CAB _____ △ CBA _____

Opposite Angles & Sides

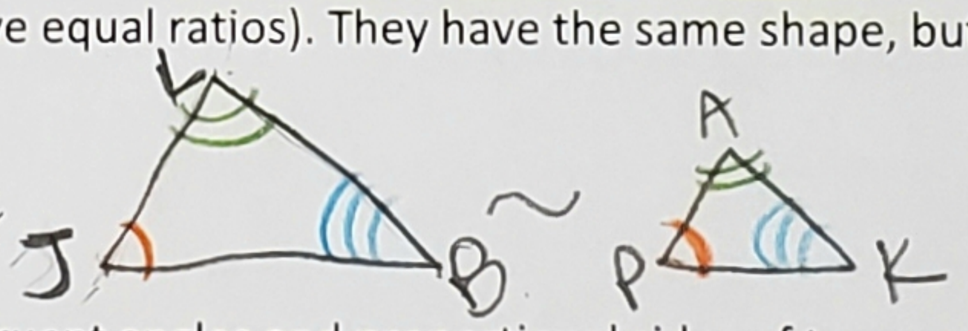
∠ A _____ is opposite side X: $\overline{CB}$, $\overline{BC}$

∠ B _____ is opposite side Z: $\overline{CA}$, $\overline{AC}$

∠ C _____ is opposite side Y: $\overline{AB}$, $\overline{BA}$

Key Terms

- Similar Triangles - Two triangles are similar if their corresponding angles are congruent and their corresponding sides are proportional (have equal ratios). They have the same shape, but not necessarily the same size.



- Similarity Symbol – This squiggly mark: ~
- Corresponding Parts – A mapping of congruent angles and proportional sides of two or more figures.
  - The corresponding parts are based on the naming direction and transformations of the figures.
  - If all 3 corresponding angles are congruent, the triangles will have the same shape, ∴ ~
- Consecutive – Side by side, Next ∠J → $\overline{JL}$ → ∠L → $\overline{LB}$ → ∠B → $\overline{BJ}$

Angle → Side → Angle → Side → Angle → Side

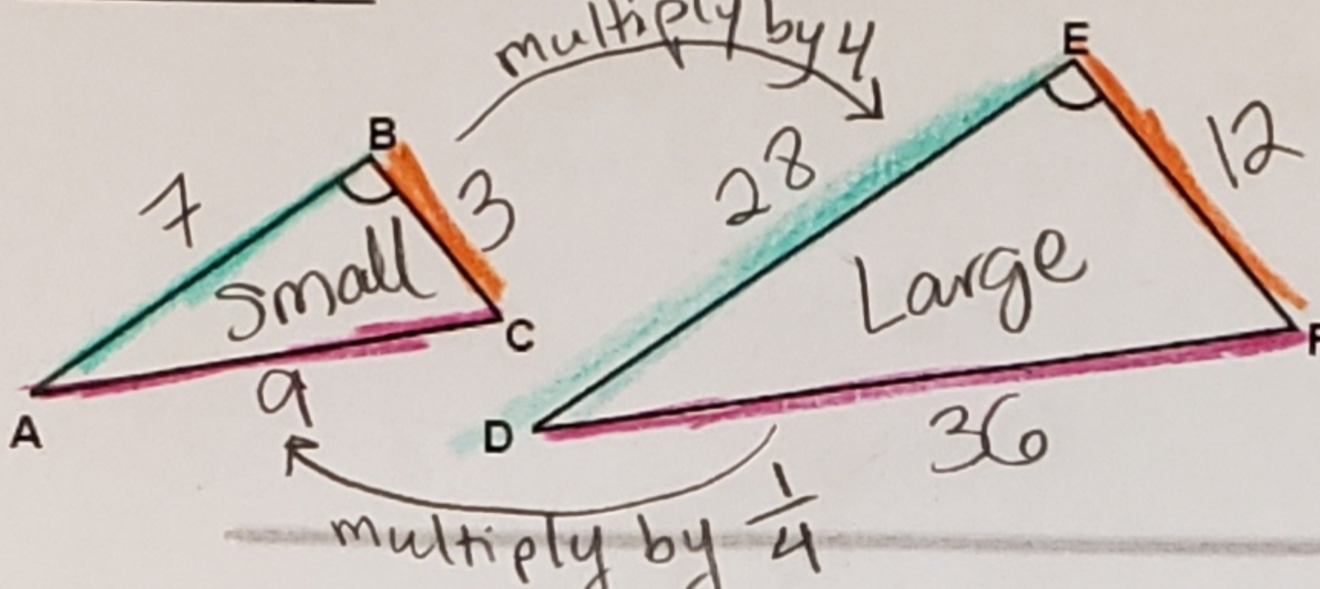
- Included Angle – An angle between two consecutive sides.
- Included Side – A side between two consecutive angles.
- Scale Factor – the common ratio between all pairs of proportional sides.

Side → Angle → Side
$\overline{AB}$ → ∠B → $\overline{BC}$

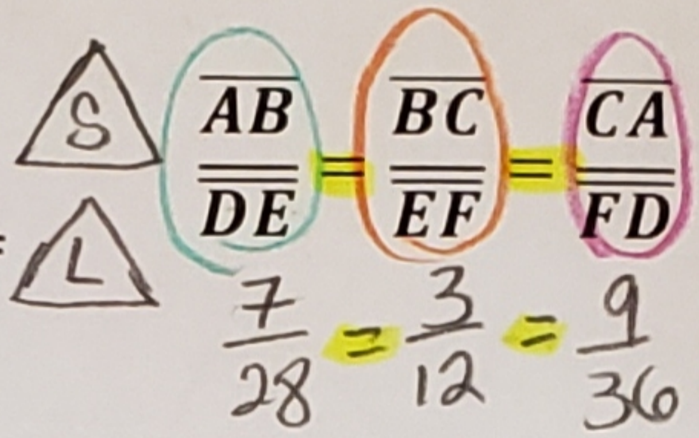
∠E → $\overline{EF}$ → ∠F Angle-Side-Angle

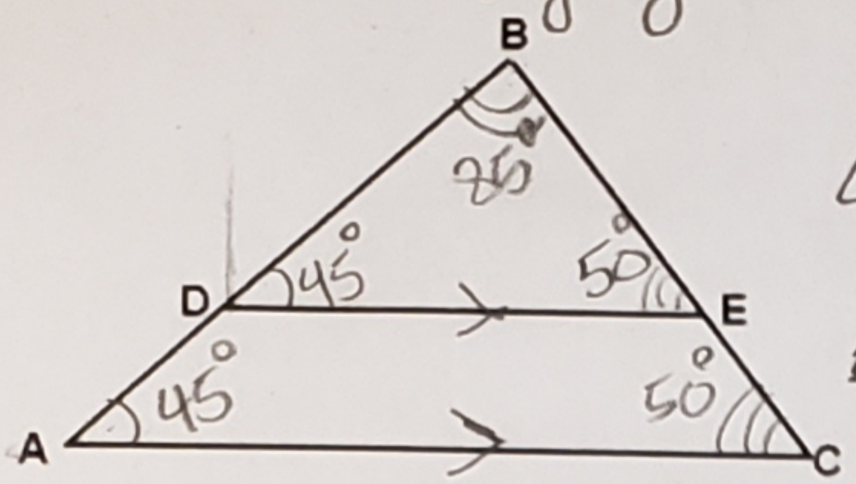
Fraction

Similar Triangles



Proportional Sides





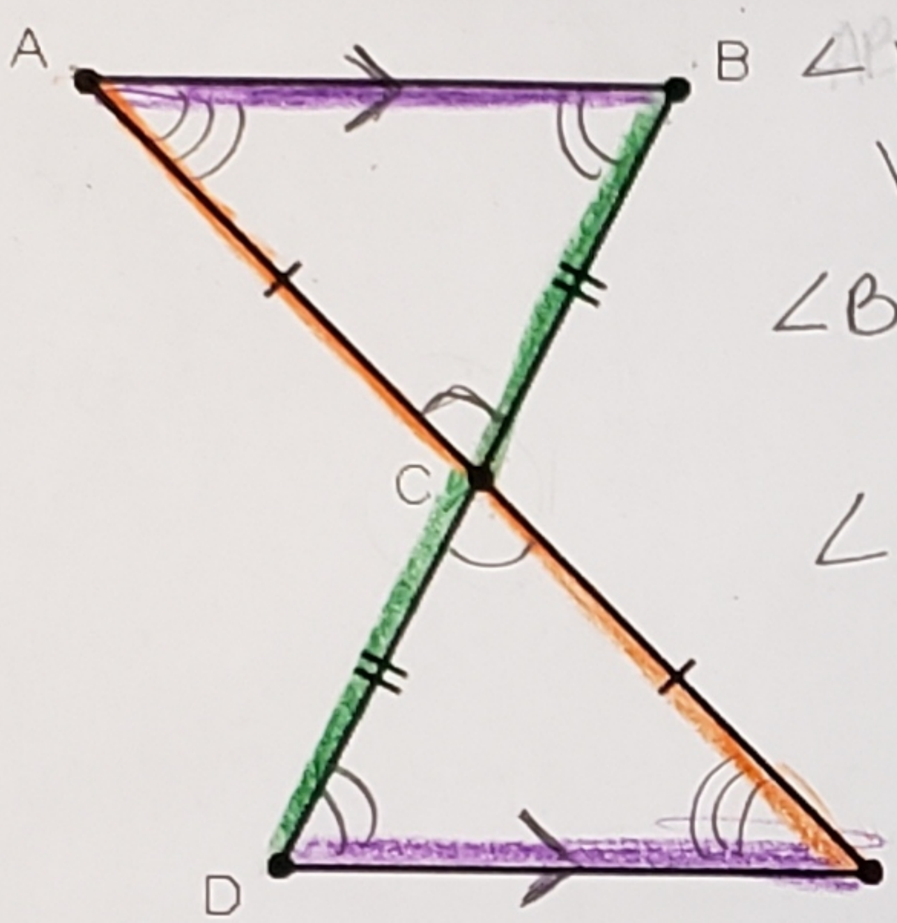
S DEB

L ACB

∠B ≅ ∠B
Reflexive

Proportional Sides

$\frac{AB}{DB} = \frac{BC}{BE} = \frac{CA}{ED}$



∠ACB ≅ ∠ECD
Vertical ∠s

∠B ≅ ∠D
Alt. Int. ∠s

∠A ≅ ∠E
Alt. Int. ∠s

Proportional Sides

$\frac{AB}{ED} = \frac{AC}{EC} = \frac{BC}{DC}$

Triangles without Diagrams

$\Delta CAT \sim \Delta DOG$

Proportional Sides

Ex. 1
$\frac{CT}{DG} = \frac{AT}{OG} = \frac{CA}{DO}$

Ex. 2
$\frac{AC}{OD} = \frac{TC}{GD} = \frac{TA}{GO}$

$\Delta CAT \sim \Delta DOG$