



Essential Question:

What are properties of similar shapes?

Questions:

Notes

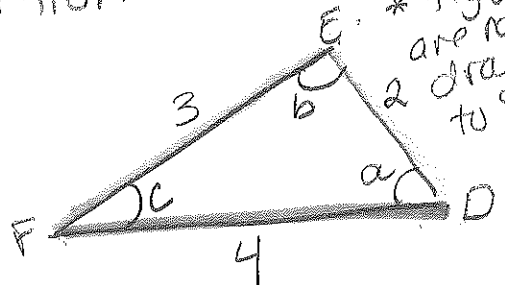
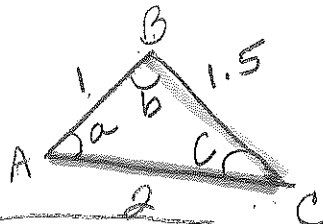
Similar Shapes: same shape, but not necessarily the same size or orientation. Notation: \sim means similar

Two shapes are similar if

① all corresponding angles are congruent (\cong)

② Corresponding sides are in proportion

ex)



$$\triangle ABC \sim \triangle DEF$$

Similarity statement: the letters are written in a specific order to describe which sides and angles are corresponding.

$$\begin{aligned} \angle A &\cong \angle D \\ \angle B &\cong \angle E \\ \angle C &\cong \angle F \end{aligned}$$

$$\frac{AB}{ED} = \frac{BC}{EF} = \frac{AC}{FD}$$

$$\frac{1}{3} = \frac{1.5}{4.5} = \frac{2}{6}$$

$$\frac{1}{3} = \frac{1}{3} = \frac{1}{3} \checkmark$$

Summary:



G3: Similarity

Geometry

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11/17/15

ESSENTIAL QUESTION:

What tools do we have to decide if triangles are similar?

QUESTIONS:

NOTES:

Similarity Conjectures Toolkit

Side-Side-Side (SSS) Similarity Conjecture

Definition:

If 3 sides of a Δ are in proportion to the corresponding sides of another Δ , then the Δ s are similar

Example:

check the ratios of all sides

Similar by SSS ϵ

Angle-Angle (AA) Similarity Conjecture

Definition:

If 2 angles in a Δ are congruent to 2 corresponding angles in another Δ , then the Δ s are similar

Example:

Since $\angle A \cong \angle D$, $\angle B \cong \angle E$
Similar by AA

Side-Angle-Side Similarity Conjecture

Definition:

If 2 sides of a Δ are in proportion to 2 corresponding sides in another Δ AND the angles between these sides are congruent, then the Δ s are similar

Example:

$\frac{6}{3} = 2$ $\frac{8}{4} = 2$ AND $\angle A \cong \angle D$
Similar by SAS

SUMMARY:

Similar

Similar by SAS



Essential Question: What are properties of similar shapes?

Questions:

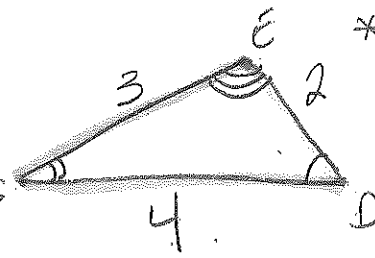
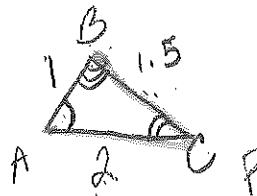
Notes

Similar shapes: same shape, but not necessarily the same size or orientation
 Notation: $\sim \Rightarrow$ similar

Two shapes are similar if

- ① all corresponding angles are congruent (\cong)
- ② corresponding sides are in proportion

ex)



* figures are not drawn to scale

$\triangle ABC \sim \triangle DEF$

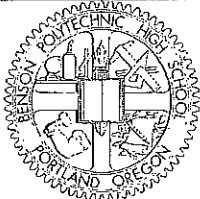
Similarity statement: the letters are written in a specific order to describe which sides and angles are corresponding.

$$\begin{aligned} \angle A &\cong \angle D \\ \angle C &\cong \angle F \\ \angle B &\cong \angle E \end{aligned}$$

$$\frac{1}{2} = \frac{2}{4} = \frac{1.5}{3}$$

$$\frac{1}{2} = \frac{1}{2} = \frac{1}{2} \checkmark$$

Summary:



TOPIC/OBJECTIVE:

G3: Similarity

CONTENT/CLASS:

Geometry

NAME:

CLASS/PERIOD:

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DATE:

11/17/15

ESSENTIAL QUESTION:

What tools do we have to decide if triangles are similar?

QUESTIONS:

NOTES:

Similarity Conjectures Toolkit

Side-Side-Side (SSS) Similarity Conjecture

Definition:

if 3 sides of a Δ are in proportion to the corresponding sides of another Δ , then the Δ s are similar

Example:

check ratios of all corresponding sides

$\frac{1}{2} = \frac{1}{2}$ $\frac{3}{6} = \frac{1}{2}$ $\frac{4}{8} = \frac{1}{2}$
 $\frac{2}{4} = \frac{1}{2}$ $\frac{3}{6} = \frac{1}{2}$ $\frac{4}{8} = \frac{1}{2}$

Angle-Angle (AA) Similarity Conjecture (AAA)

Definition:

if 2 angles in a Δ are congruent to 2 corresponding angles in another Δ , then the Δ s are similar

Example:

Since $\angle A \cong \angle F$ and $\angle B \cong \angle D$, the Δ s are similar by AA

Side-Angle-Side Similarity Conjecture

Definition:

if 2 sides of a Δ are in proportion to 2 corresponding sides in another Δ and the angles between these sides are congruent, then the Δ s are similar

Example:

$\frac{3}{6} = \frac{1}{2}$ $\frac{4}{8} = \frac{1}{2}$

SUMMARY:

AND $\angle A \cong \angle D$
 similar by SAS