What is Similarity?

Learning Goals

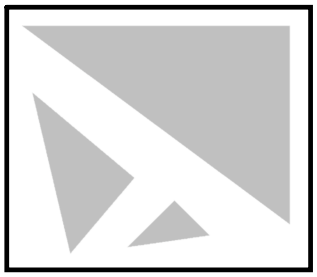
Minds on Math

What do you notice about the triangles you've been given?

-think about any characteristics, properties, and/or relationships)

-there are some tools available if you're needing them (desk in centre of classroom)

-post all of your group's ideas on your assigned WB



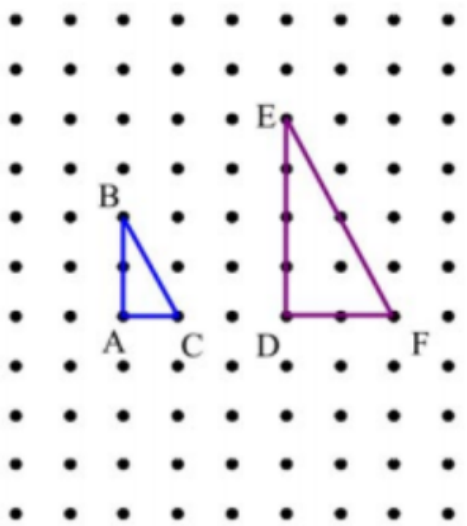
Minds on Math-Summary of Ideas

What do you notice about the triangles?

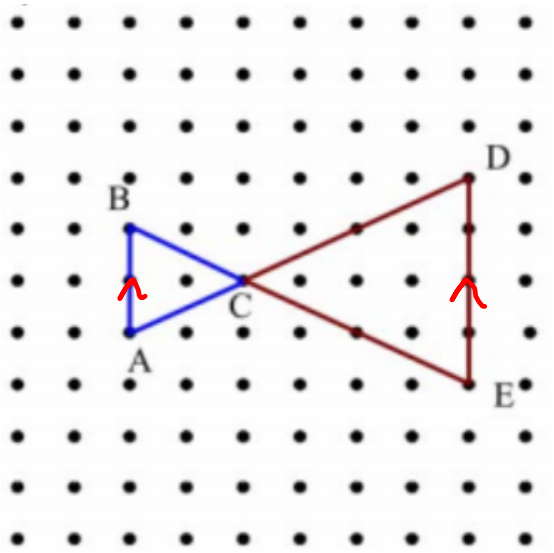
-think about any characteristics, properties, and/or relationships)

Pull

Similar or not?



Similar or not?



What is Similarity?

For each of the triangles you've been given, measure each of the sides and angles. Record them using the table provided.

Triangle	Hypotenuse	Shortest side	Middle side	Angles
ΔABC	5	3	4	37^0 53^0 90^0
Δ DEF	20	12	16	37^0 53^0 90^0
ΔGHK	10	6	8	37^0 53^0 90^0

What is Similarity?

>> Complete the following calculations.

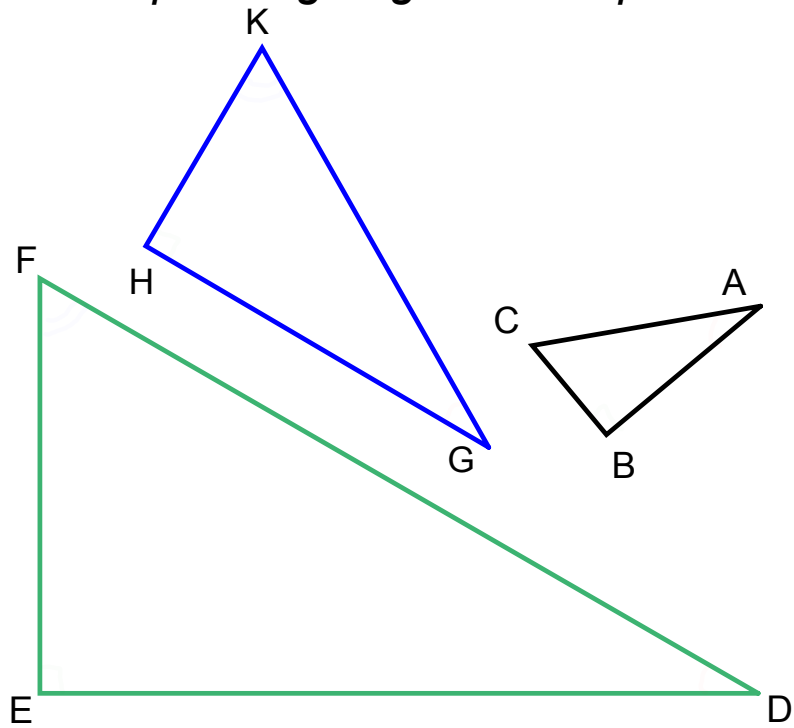
$$\frac{Length\cdot of\cdot hypotenuse\cdot of\cdot \Delta DEF}{Length\cdot of\cdot hypotenuse\cdot of\cdot \Delta ABC} = \frac{20}{5} = \frac{4}{1} \qquad \frac{Length\cdot of\cdot hypotenuse\cdot of\cdot \Delta DEF}{Length\cdot of\cdot hypotenuse\cdot of\cdot \Delta GHK} = \frac{20}{10} = \frac{2}{1}$$

$$\frac{Length\cdot of\cdot shortest\cdot side\cdot of\cdot \Delta DEF}{Length\cdot of\cdot shortest\cdot side\cdot of\cdot \Delta ABC} = \frac{12}{3} = \frac{4}{1} \qquad \frac{Length\cdot of\cdot shortest\cdot side\cdot of\cdot \Delta DEF}{Length\cdot of\cdot shortest\cdot side\cdot of\cdot \Delta GHK} = \frac{12}{6} = \frac{2}{1}$$

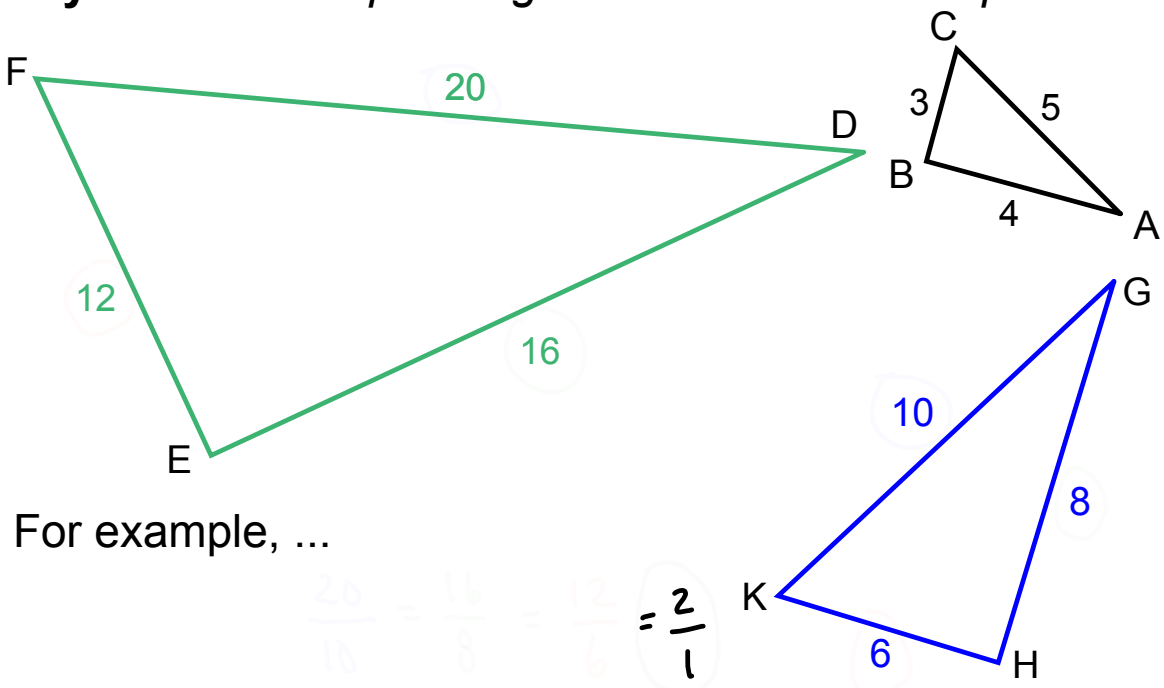
$$\frac{Length\cdot of\cdot middle\cdot side\cdot of\cdot \Delta DEF}{Length\cdot of\cdot middle\cdot side\cdot of\cdot \Delta ABC} = \frac{16}{4} = \frac{4}{1} \qquad \frac{Length\cdot of\cdot middle\cdot side\cdot of\cdot \Delta DEF}{Length\cdot of\cdot middle\cdot side\cdot of\cdot \Delta GHK} = \frac{16}{8} = \frac{2}{1}$$

>> What do you notice about the ratios you have calculated in each column? State each ratio. **This ratio is called a scale factor.**

Key Idea: *Corresponding angles are equal*



Key Idea: *Corresponding ratios of sides are equal*

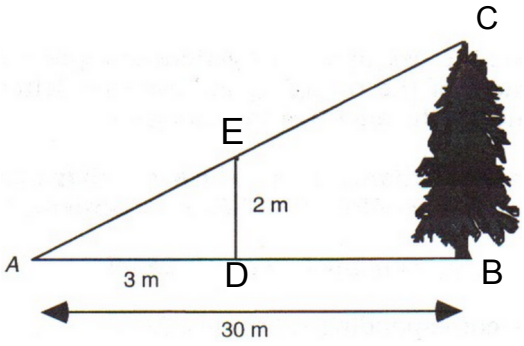


For example, ...

$= \frac{2}{1}$

Solving for missing side lengths using proportional reasoning

E.g., Calculate the height of the tree.



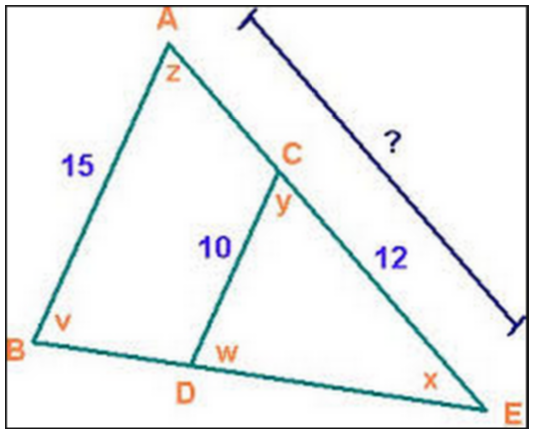
1-Which sides correspond?

2-Set up a proportion.

3-Solve.

Solving for missing side lengths using proportional reasoning

E.g., 2. Solve for *?*



1-List ratios of *corresponding* sides

2-Set up a proportion

3-Solve

What did you learn today?

Personal:

Reflect upon the learning goals set for today's lesson.

-What were today's goals?

-What do you understand? What do you know how to do?

Practice

Complete the worksheets provided (photocopy)

Similar Triangles_Practice.pdf

Attachments

Similar Triangles_Practice.pdf