

BE-1B THURSDAY 2-1-07 

AHSGE WORKBOOK

<u>PAGE</u>	<u>PROBLEM</u>
61	6
64	6
66	3
66	4
67	6

(1)

RECALL:

2 RATIOS THAT ARE EQUAL TO EACH OTHER ARE A _____ .
PROPORTION

(EX)

$$\frac{2}{5} = \frac{10}{25}$$

(EX)

$$\frac{3}{x} = \frac{5}{8}$$

READ: "3 is to x AS
5 is to 8"

A PROPERTY OF PROPORTIONS THAT CAN
BE USED TO SOLVE THEM IS THAT
THE _____ ARE EQUAL.
CROSS PRODUCTS

(EX)

$$\frac{2}{5} = \frac{10}{25}$$

so $2 \cdot 25 = 5 \cdot 10$ ✓

(EX)

$$\frac{3}{x} = \frac{5}{8}$$

so $5x = 24$

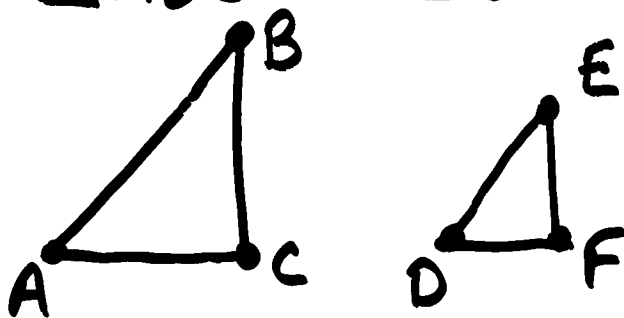
$$\boxed{x = \frac{24}{5}}$$

IN GEOMETRY, THE WORD "SIMILAR" HAS A SPECIAL MEANING. IT MEANS TWO SHAPES ARE THE SAME BUT HAVE DIFFERENT SIZES. (EX) SHRINKING OR ENLARGING SOMETHING WITH A COPIER

Symbol is $\sim$ "tilda"

Ch. 11-6 SIMILAR TRIANGLES

(EX) $\triangle ABC \sim \triangle DEF$



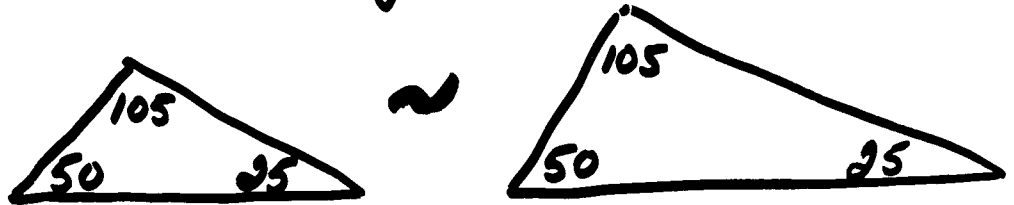
TRIANGLES ARE NAMED BY THEIR VERTICES. THE ORDER OF THE VERTICES IS IMPORTANT. THE ORDER SHOW WHICH VERTEX OF ONE TRIANGLE "GOES WITH THE OTHER" $\Rightarrow$ ARE CORRESPONDING

$\triangle ABC$
 $\downarrow \downarrow \downarrow$
 $\triangle DEF$

PROPERTIES OF SIMILAR Δ 'S

- ① ALL 3 ANGLES ARE EQUAL TO THOSE CORRESPONDING ANGLES IN THE OTHER TRIANGLE.

(EX)



- ② The 3 PAIRS OF CORRESPONDING sides ARE in proportion.

(EX)



$$\frac{3}{9} = \frac{5}{15} = \frac{6}{18} \quad \begin{array}{l} \leftarrow \text{SMALL} \\ \leftarrow \text{LARGE} \end{array}$$

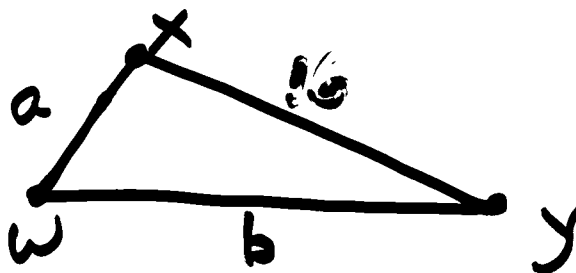
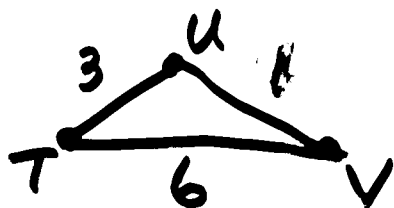
$$\text{OR } \frac{9}{3} = \frac{15}{5} = \frac{18}{6} \quad \begin{array}{l} \leftarrow \text{LARGE} \\ \leftarrow \text{SMALL} \end{array}$$

(4)

Proportions CAN BE USED TO FIND
THE MEASURE OF UNKNOWN SIDES
IF YOU KNOW ^{SOME OF THE} MEASURES OF SIDES IN
A SIMILAR Δ .

EX 2a
Pg 617

$\Delta TUV \sim \Delta WXY$
Find sides a, b



$$\frac{4}{16} = \frac{3}{a}$$

$$4a = 48$$

$$\boxed{a = 12}$$

$$\frac{4}{16} = \frac{1}{4} = \frac{6}{b}$$

$$\boxed{b = 24}$$

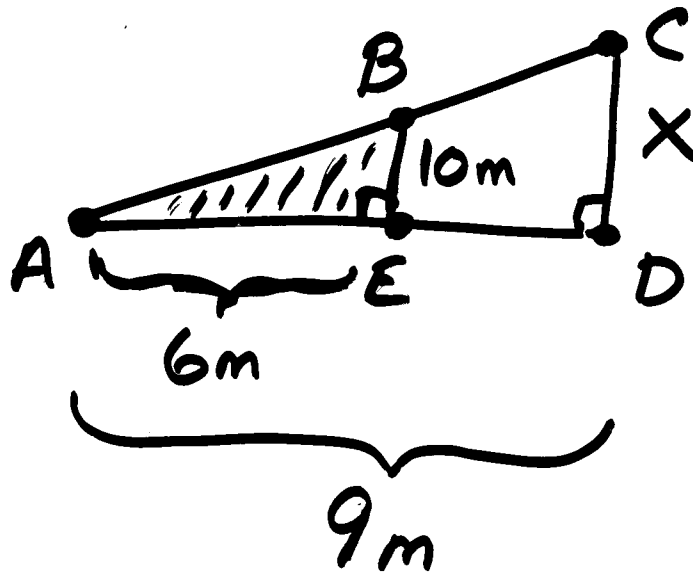


- MAKE SURE "LIKE" goes WITH "LIKE"
- EACH RATIO MUST BE $\frac{\text{SMALL}}{\text{LARGE}}$ OR $\frac{\text{LARGE}}{\text{SMALL}}$

EX 26
PG 617

5.

$$\triangle ABE \sim \triangle ACD$$



Find X

$$\frac{6}{9} = \frac{10}{X}$$

$$\frac{6X}{6} = \frac{90}{6}$$

$$X = 15m$$

⚡ Don't forget, if 2 $\triangle$ are similar,
ALL corresponding angles are equal,
NO MATTER HOW DIFFERENT THE SIZE OF
the $\triangle$.

Pg. 618 # 4, 5, 6

Summary:

- Similar triangles $\Rightarrow$ SAME SHAPE, different size
 - Symbol $\Rightarrow \sim$
 - $\triangle$ NAMED BY VERTICES, ORDER MATTERS.
 - Similar $\triangle \Rightarrow$ ① ALL $\angle$'s EQUAL
② 3 pairs of sides ARE in proportion
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Homework: Read Ch 11-6

Pg. 619 #11-14, 17-20