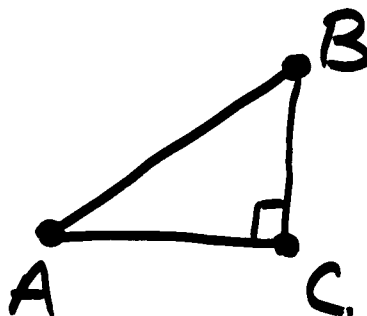


Alg. 1 - BE MONDAY 3-30-09

① GIVEN $\triangle ABC$



- ② $\angle A$ AND $\angle B$ ARE COMPLEMENTARY,
WHAT DOES THAT MEAN?
- ③ If the $m\angle A$ is 30° , WHAT IS $m\angle B$?
- ④ If $a = 7$, $c = 12$, $b = ?$
- ⑤ WHAT IS THE AREA OF $\triangle ABC$?
-

- MARK UP Quiz 1 WITH MISSED ANSWERS
; keep for study and redo if needed.
- Report cards for Q3 tomorrow.
(DesCartes B'day)
↓ ↓
"DAY CART"

Comparing Numbers

If x, y are any real numbers:

$$x > y$$

$$x = y$$

$$x < y$$

Comparing "Flat" Shapes

Let $\triangle, \triangle$ be any two flat shapes,



NOT SAME SHAPE
OR SIZE,
NOT CONGRUENT



CONGRUENT, EXACTLY
THE SAME SHAPE
AND SIZE. FIT
EXACTLY OVER
EACH OTHER.



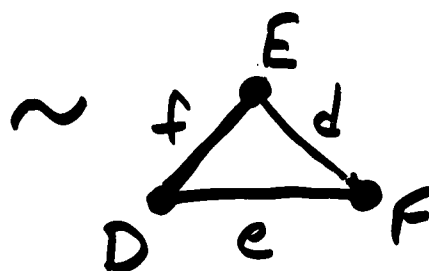
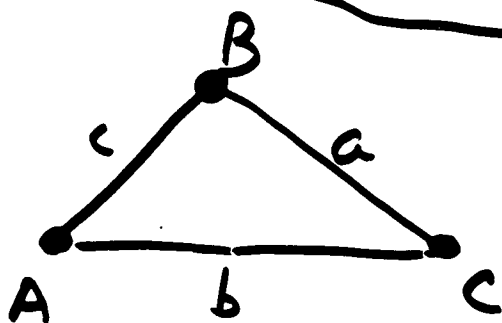
SAME SHAPE, BUT
DIFFERENT SIZE, THE
SIDES ARE
PROPORTIONAL TO
EACH OTHER.

$\sim$ SHAPES ARE SAME
 $=$ MEASURES OF SHAPES ARE SAME

Ex) SCALE MODELS OR
SCALE DRAWINGS (blueprints)

TRIANGLES ARE NAMED USING
their VERTICES, NOTE CAPITAL LETTERS.

VERTEX $\Rightarrow$ INTERSECTION = SINGULAR
VERTICES $\Rightarrow$ PLURAL



Also

$\triangle ABC$	$\sim$	$\triangle DEF$	$m\angle A = m\angle D$
or $\triangle BCA$	$\sim$	$\triangle EFD$	$m\angle B = m\angle E$
or $\triangle CAB$	$\sim$	$\triangle FDE$	$m\angle C = m\angle F$
or $\triangle ACB$	$\sim$	$\triangle DFE$	
or $\triangle CBA$	$\sim$	$\triangle FED$	
or $\triangle BAC$	$\sim$	$\triangle EDF$	

$$\frac{\overline{AB}}{\overline{ED}} = \frac{\overline{BC}}{\overline{EF}} = \frac{\overline{AC}}{\overline{DF}}$$

or $\frac{c}{f} = \frac{a}{d} = \frac{b}{e}$

NOTE:
THE CROSS-PRODUCTS
OF PROPORTIONS
ARE EQUAL

The two important facts about similar triangles:

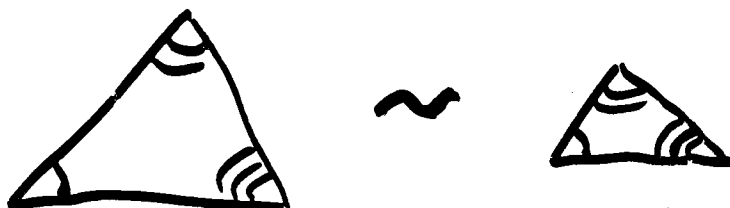
- ① the measures of corresponding sides are proportional.
- ② the measures of corresponding angles are equal.

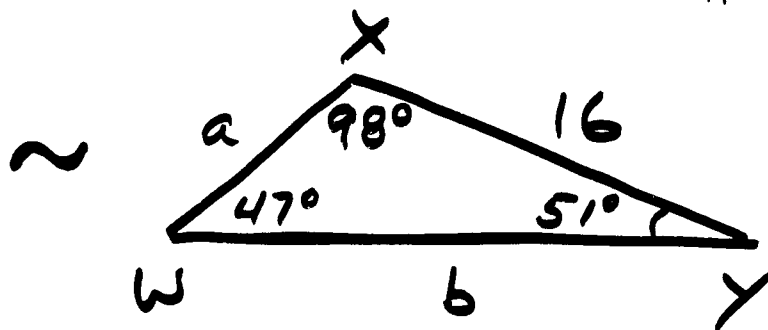
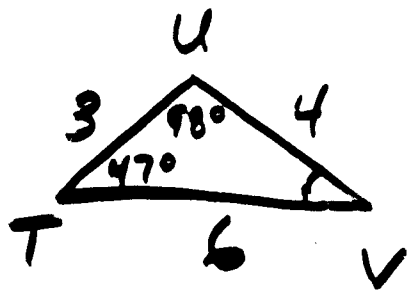
To test if two triangles are similar:

- ① if the 3 pairs of ^{corresponding} sides are proportional, the Δ 's are $\sim$.
- ② if the 3 ^{corresponding} angles are equal, Δ 's are $\sim$.

To show 3 different but correspondingly equal angles:

Ex)





① Find a

$$\begin{array}{l} \text{small} \rightarrow 3 \\ \text{large} \rightarrow a \end{array} = \frac{4}{16} \begin{array}{l} \leftarrow \text{small} \\ \leftarrow \text{large} \end{array} \therefore 4a = 3 \cdot 16$$

$$\boxed{a = 12}$$

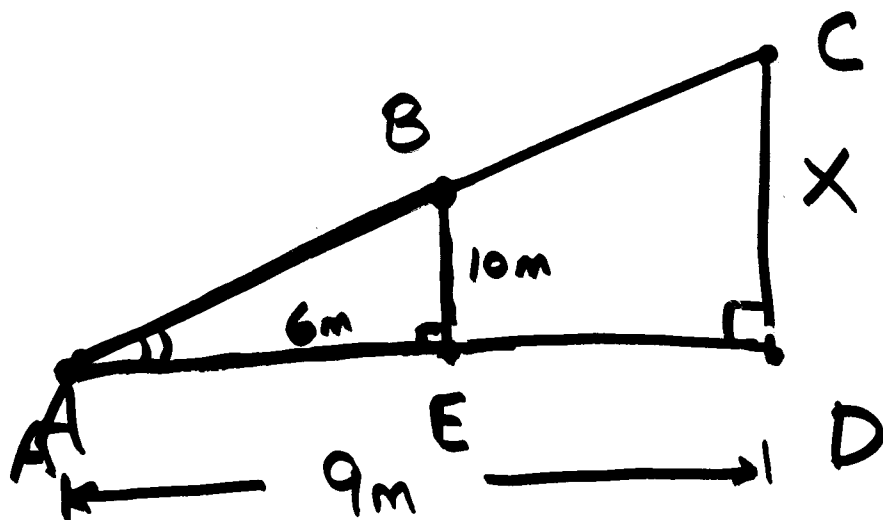
$$\text{or } \begin{array}{l} \ell \rightarrow a \\ s \rightarrow 3 \end{array} = \frac{16}{4} \begin{array}{l} \leftarrow \ell \\ \leftarrow s \end{array} \therefore 4a = 3 \cdot 16 \quad a = 12 \checkmark$$

② Find b

$$\frac{6}{b} = \frac{4}{16} \therefore 4b = 6 \cdot 16$$

$$\boxed{b = 24}$$

↑ EX 2 Pg 617 ↑



Since $m\angle BEA = m\angle CDA = 90^\circ$

AND $m\angle A = m\angle A = \text{same for both } \Delta$

$\therefore m\angle ABE = m\angle ACD \Rightarrow$ only $\angle$ left
in both Δ 's,
if 2 $\angle$'s are
equal, third must
be too

$\therefore$ Since ALL THE ANGLES in $\Delta ACD = \Delta ABE$
 $\Delta ABE \sim \Delta ACD$

Find X

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

$$\therefore 6X = 90$$

$$\boxed{X = 15 \text{ m}}$$

{EX 2
Pg 617}

Homework: ① Read
Ch 11-6

② Pg 619 # 11-14
17-19