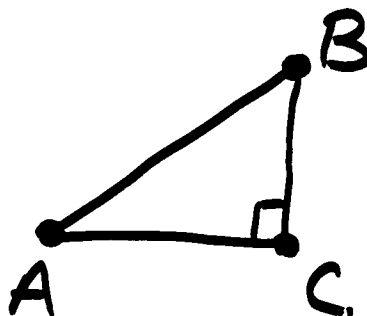


Alg. 1 - BE MONDAY

3-19-2012

① GIVEN $\triangle ABC$



- Ⓐ $\angle A$ AND $\angle B$ ARE COMPLEMENTARY, WHAT DOES THAT MEAN?
- Ⓑ IF THE $m\angle A$ IS 30° , WHAT IS $m\angle B$?
- Ⓒ IF $a = 7$, $c = 12$, $b = ?$
- Ⓓ WHAT IS THE AREA OF $\triangle ABC$?
-

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.



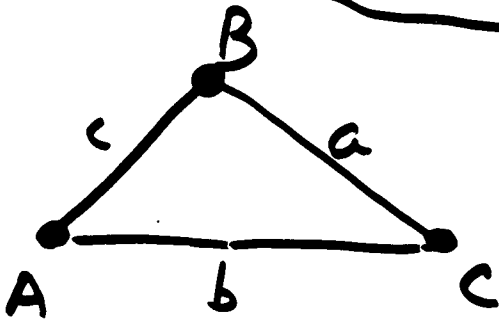
SAME SHAPE, BUT
DIFFERENT SIZE, THE
SIDES ARE
PROPORTIONAL TO
EACH OTHER.

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

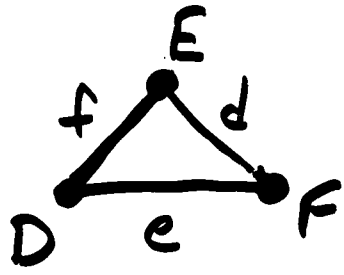
EX) SCALE MODELS OR
SCALE DRAWINGS (BLUEPRINTS)

TRIANGLES ARE NAMED USING their VERTICES, NOTE CAPITAL letters.

VERTEX => INTERSECTION = SINGULAR
VERTICES => 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.

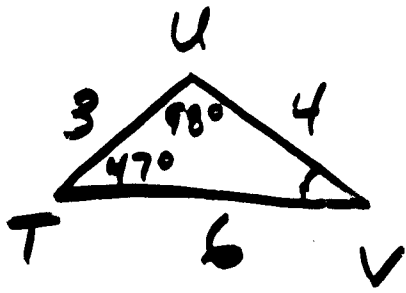
To test if two triangles are similar:

- 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 .

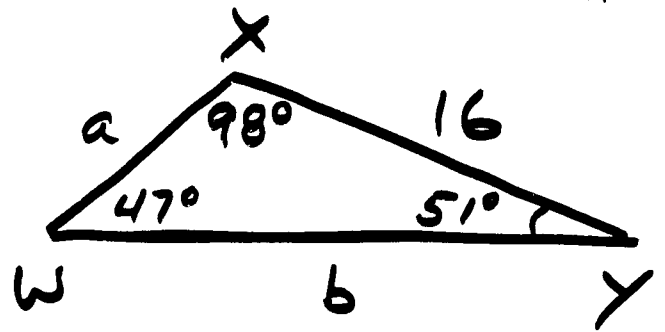
To show 3 different but correspondingly EQUAL angles:

Ex)





~



① Find a

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

$$\boxed{a = 12}$$

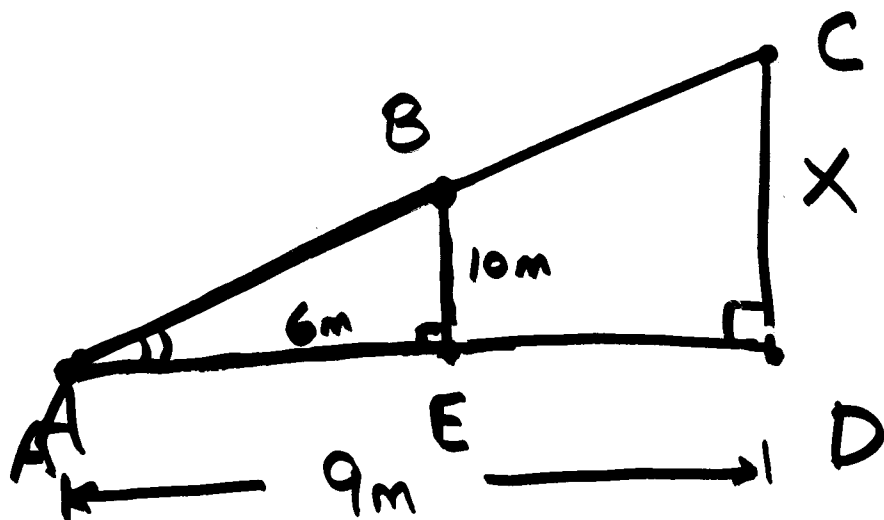
$$\text{or } \begin{array}{l} l \rightarrow a \\ s \rightarrow 3 \end{array} = \frac{16 \leftarrow l}{4 \leftarrow s} \therefore 4a = 3 \cdot 16 \quad a = 12 \checkmark$$

② Find b

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

$$\boxed{b = 24}$$

↑ EX 2 Pg 617 ↑



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

AND $\angle A = \angle A = \text{SAME}$ for both \triangle

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

\therefore Since ALL THE ANGLES in $\triangle ACD = \triangle ABE$

$\triangle ABE \sim \triangle ACD$

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