

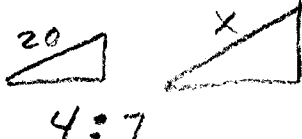
ACT
PRACTICE

① The lengths of the corresponding sides of 2 similar right triangles are in the ratio of 4:7. The hypotenuse of the smaller triangle is 20 in. How long is the hypotenuse of the larger triangle (inches).

② $-6|-10+11|$

③ Find the surface area of a cube with each side equal to 7m.

ANS

①  $\frac{20}{x} = \frac{4}{7}$ $4x = 140$
 $x = 35 \text{ in}$

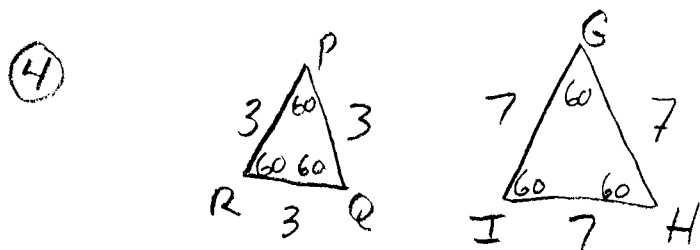
② $-6|-10+11| = -6$

③  $\Rightarrow 49 \text{ m}^2 \text{ per side}$
 $\times 6$
 294 m^2

Homework Review Page 293 # 3-9

- ③ If 2 polygons are congruent, they are also similar because the corresponding $\angle$ s are $\cong$ and the sides are in a 1:1 proportion since they are congruent.

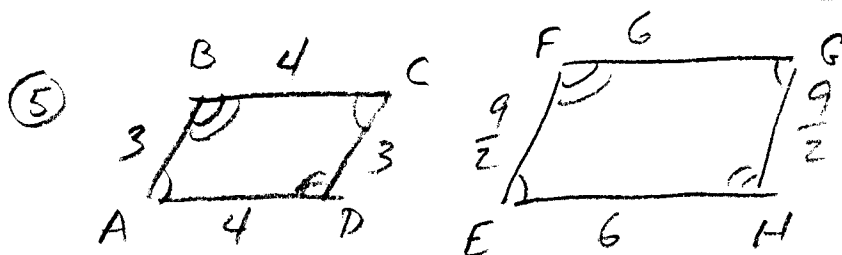
Two similar polygons are only congruent if the sides are in a 1:1 proportion.



$\triangle PQR \sim \triangle GHI$ Because both are $\triangle$

$$\therefore \angle P \cong \angle G, \angle R \cong \angle I, \angle Q \cong \angle H$$

$$\text{And all sides are } \frac{3}{7} = \frac{PQ}{GH} = \frac{PR}{GI} = \frac{RQ}{IH}$$



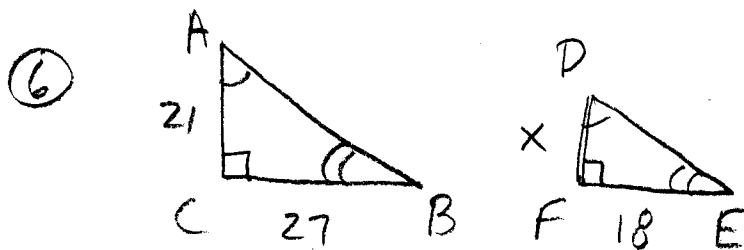
$$\frac{4}{6} \stackrel{?}{=} \frac{3}{\frac{9}{2}}$$

$$18 = 4 \cdot \frac{9}{2} \checkmark$$

All sides are in proportion,
the scale factor is $\frac{2}{3}$

All corr. $\angle$ s $\cong$

$\therefore \boxed{ABCD \sim EFGH}$



$$\triangle ACB \sim \triangle DFE$$

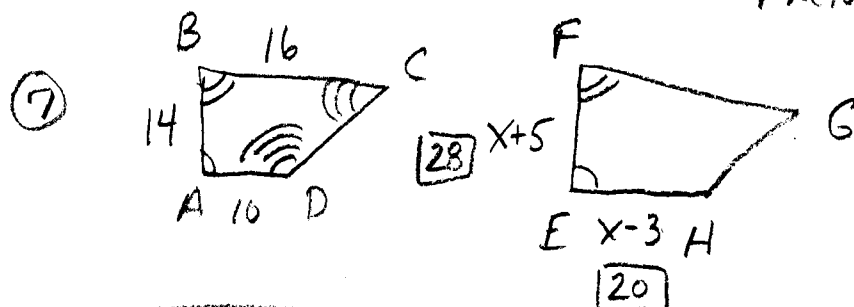
$$\frac{21}{x} = \frac{27}{18}$$

$$\frac{21}{x} = \frac{3}{2}$$

SCALE
FACTOR

$$\therefore 3x = 42$$

$$x = 14$$



$$ABCD \sim EFGH$$

REDRAW
&
LABEL

$$\frac{14}{x+5} = \frac{10}{x-3}$$

$$\therefore 10x + 50 = 14x - 42$$

$$-10x \quad -10x$$

$$92 = 4x$$

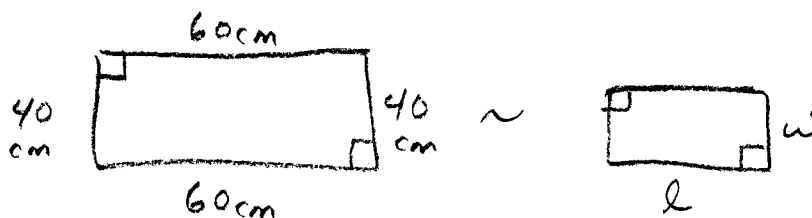
$$23 = x$$

$$\therefore \begin{cases} \overline{FE} = 28 \\ \overline{EH} = 20 \end{cases}$$

$$\therefore \text{SCALE FACTOR IS } \frac{10}{20} = \frac{1}{2}$$

$$\therefore \frac{16}{FG} = \frac{1}{2} \quad \therefore \boxed{FG = 32}$$

⑧



SCALE FACTOR is $\frac{1}{4} = \frac{\text{SMALL}}{\text{LARGE}}$

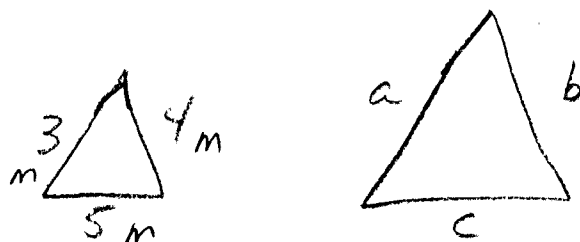
$$\therefore \frac{w}{40} = \frac{1}{4} \quad \therefore 4w = 40 \quad \boxed{w = 10 \text{ cm}}$$

$\uparrow$
UNITS!

$$\frac{l}{60} = \frac{1}{4} \quad \therefore 4l = 60 \quad \boxed{l = 15 \text{ cm}}$$

$\uparrow$
UNITS!

⑨



SCALE FACTOR is $\frac{5}{1} \frac{\text{LARGE}}{\text{SMALL}} \quad \therefore \frac{5}{1} = \frac{a}{3}$

$$a = 15 \text{ m}$$

$$b = 20 \text{ m}$$

$$c = 25 \text{ m}$$

$$P = 15 + 20 + 25$$

$$\boxed{P = 60 \text{ m}}$$

Ch. 6-3 Similar Triangles

How TO IDENTIFY SIMILAR Δ 's

AA $\Rightarrow$ "2 $\angle$ s gets you 3" so this is
REALLY AAA in disguise

IF 2 $\angle$ s of one Δ are $\cong$
to 2 $\angle$ s of another Δ , the
 Δ 's ARE SIMILAR.

SSS In Proportion $\Rightarrow$ IF All 3 pairs of
corresponding sides are
in proportion, the Δ 's
ARE SIMILAR.

(Summary 3 $\angle$ s $\cong$ of 3 pairs of sides in proportion)

FINALLY:

SAS $\Rightarrow$ Two sides in proportion and the
included angle $\cong$, Δ 's ARE SIMILAR.

⑥ Find geometric mean between
6 and 15

$$\frac{6}{x} = \frac{x}{15} \quad \therefore x^2 = 90$$

$$x = \sqrt{90}$$

9 10

$$\boxed{x = 3\sqrt{10}} \quad x \approx 9.49$$

Homework: Pg 301 # 5-8

Pg 345 # 4-7