Two figures are similar if:

a. Same Shape

b. usually Different Size

For Polygons to be considered similar that must have:

(1) Congruent Corresponding Angles

All pairs of corresponding angles must be ≅

(gives figures the same shape)

(2) Corresponding Sides are Proportional

All pairs of corresponding sides must have the same ratio

(gives figures different size)

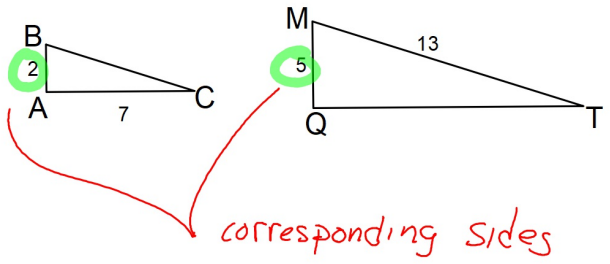
The Similarity Ratio is:

Ratio of corresponding sides.

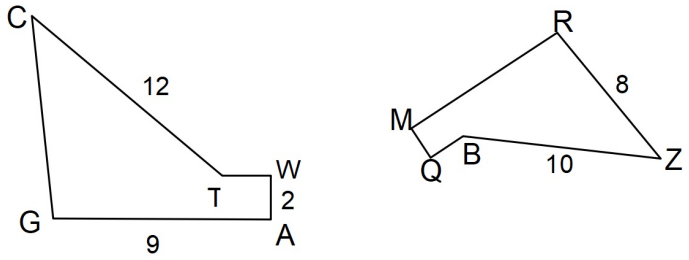
Similarity Statement:
Names each figure such that corresponding vertices occur in the same spot in each name.

1. Similarity Statement: one possible answer: $\triangle ABC \sim \triangle QMT$

Similarity Ratio: $\frac{2}{5}$ or $\frac{5}{2}$



2. Given these figures are similar state the Similarity Ratio and write a Similarity Statement.

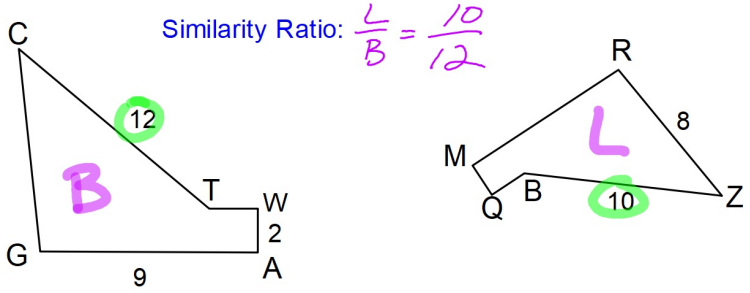


Similarity Statement:

one possible answer: $CGAWT \sim ZRMQB$

3. Given these figures are similar state the Similarity Ratio.

Similarity Ratio: $\frac{L}{B} = \frac{10}{12}$



MQ =

$\frac{10}{12} = \frac{MQ}{2}$

$MQ = 1.67$

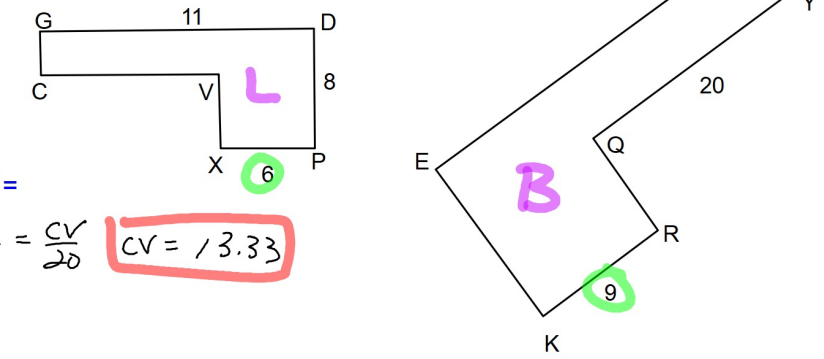
CG =

$\frac{10}{12} = \frac{8}{CG}$

$CG = 9.6$

4. Given these figures are similar state the Similarity Ratio

Similarity Ratio: $\frac{L}{B} = \frac{6}{9}$



CV =

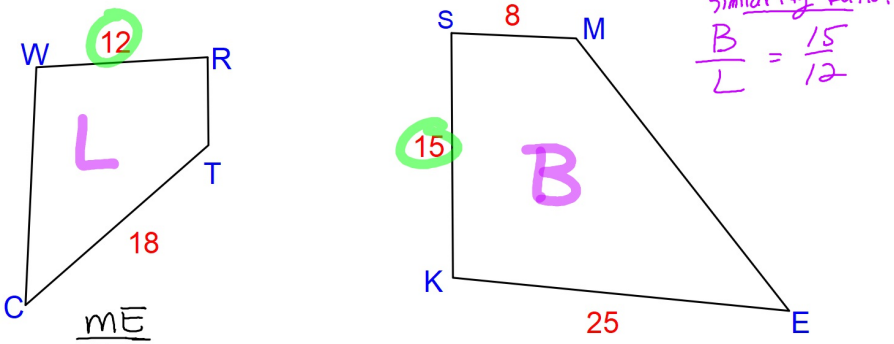
$\frac{6}{9} = \frac{CV}{20}$ $CV = 13.33$

EK =

$\frac{6}{9} = \frac{8}{EK}$ $EK = 12$

5. Given these figures as similar find the lengths of $\overline{ME}$ and $\overline{WC}$.

Similarity Ratio: $\frac{B}{L} = \frac{15}{12}$



$\overline{ME}$

$\frac{15}{12} = \frac{ME}{18}$

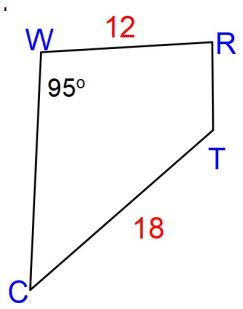
$ME = 22.5$

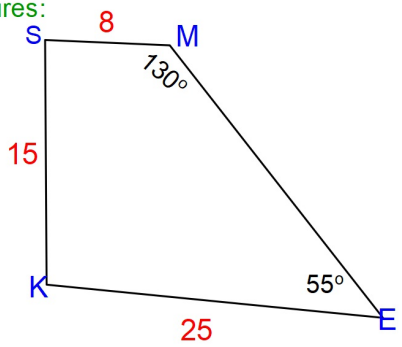
$\overline{WC}$

$\frac{15}{12} = \frac{25}{WC}$

$WC = 20$

6. Given these are similar figures:





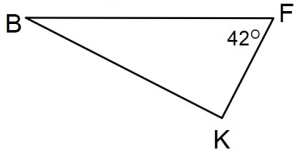
Find the measure of the following angles:

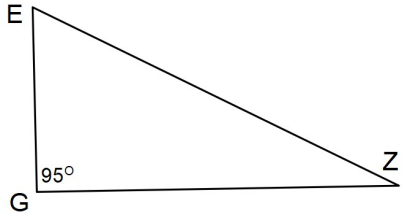
angle C = 55°
∠C corresp w/ ∠T

angle K = 95°
∠K corresp w/ ∠W

angle R =
∠T corr w/ ∠M
360 - ∠W - ∠C - ∠T
= 360 - 95 - 55 - 130
= 80°

7. Given these figures are similar find the measure of the missing angles.





a) $m\angle K = 95°$
∠K corresp w/ ∠G

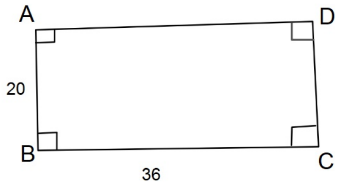
b) $m\angle E =$ 42°
∠E corresp w/ ∠F

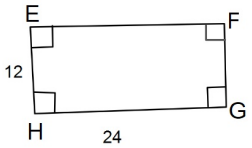
c) $m\angle Z = 43°$
180 - ∠G - ∠E
= 180 - 95 - 42

To show that two polygons are similar you must show that:

- All pairs of corresponding angles are ≅. and
- All pairs of corresponding sides have the same ratio.

Are this pair of polygons similar?





Are all pairs of corresponding angles congruent?
Yes, all angles are 90°.

Do all pairs of corresponding sides have the same ratio?

NO $\frac{20}{12} \neq \frac{36}{24}$

$\frac{5}{3} \neq \frac{3}{2}$

Hwk #11 Sec 7-2

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Problems 2-5, 7, 8, 10, 11, 13, 14