Congruent Figures:

2 figures are congruent if they have:
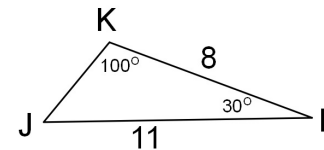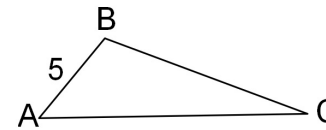
- The same shape
- The same size

Corresponding Angles
are congruent

Corresponding Sides
are congruent

$\triangle$ ABC is congruent to $\triangle$ JKL

1. $\angle$A corresponds to $\angle$ J

2. $\overline{KL}$ corresponds to $\overline{BC}$

3. The length of $\overline{BC}$ = 8

4. The measure of $\angle$C is = $30°$

5. The measure of $\angle$A is = $50°$

$\angle A \cong \angle J$

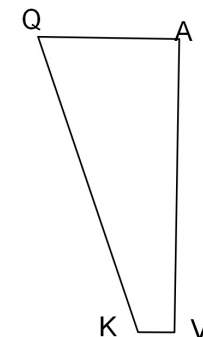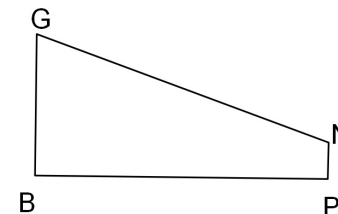$m\angle J = 180 - 100 - 30 = 50$

Symbols

Congruent

$\cong$

Given these two figures are congruent, write a congruence statement.

Ex answer:

GNPB $\cong$ QKVA

A 3 foot tall girl casts a 5 foot long shadow at the same time a lampost casts a 18 foot long shadow. How tall is the lampost?

This is called indirect measurement

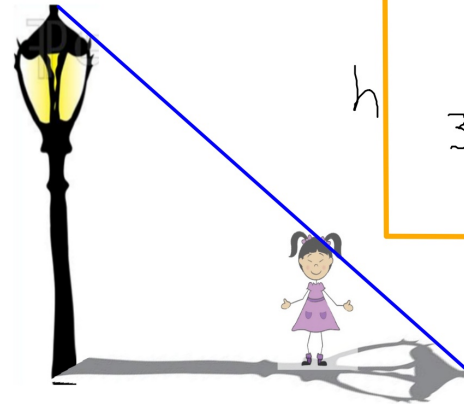$$\frac{3 \, ht}{5 \, sh} = \frac{x \, ht}{18 \, sh}$$

$$3(18) = 5x$$

$$54 = 5x$$

$$\frac{54}{5} = \frac{5x}{5}$$

$$10.8 = x$$

A 3 foot tall girl casts a 5 foot long shadow at the same time a lampost casts a 18 foot long shadow. How tall is the lampost?

$$\frac{3}{h} = \frac{5}{18}$$

h   3   5   18

Section 4-2: Similar Figures

2 figures are similar if they have:

- The same shape
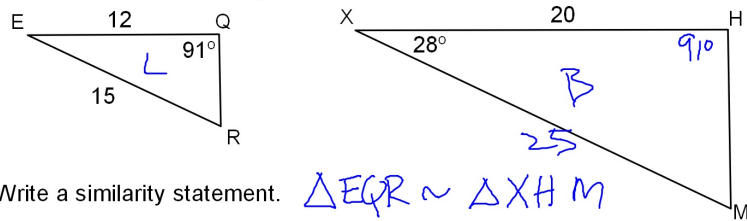
    Corresponding Angles are congruent

- Different size

    Corresponding Sides are proportional

Symbols

Similar

~

Given the two triangles are similar.

E   12   Q   X   20   H

91°   28°   91°

L   15   B

R   25

M

1. Write a similarity statement. $\triangle EQR \sim \triangle XHM$

2. ∠H correpsonds to $\angle Q$

3. $\overline{QR}$ corresponds to $\overline{HM}$
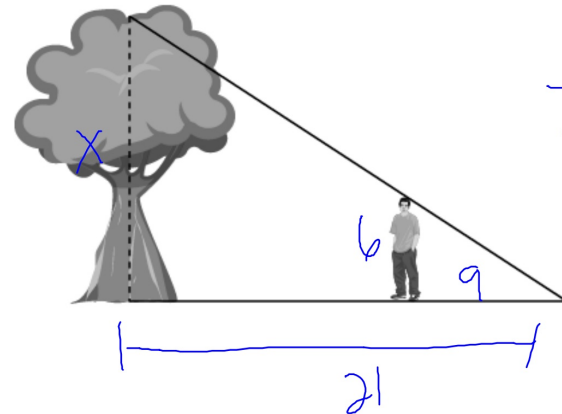
4. The measure of ∠M = $61°$

5. The measure of $\overline{XM}$ =

$\dfrac{L}{B}$

$XM = 25$

$\dfrac{12}{20} = \dfrac{15}{XM}$

A 6 feet tall boy cast a shadow of 9 feet. At the same time of day, if the shadow of tree measures 21 feet, what is the height of the tree?

X

6

9

21

$\dfrac{6}{x} = \dfrac{9}{21}$

14 ft