Geo 6

ratio - comparison of two things often written as a fraction

(ex) The ratio of girls to guys is 2 to 3 or $\frac{2}{3}$

Proportion - when two ratios are equal.

(ex.) $\frac{x}{6} = \frac{2}{3}$

$x = 4$

(ex.) $\frac{3}{x} = \frac{5}{20}$

$20 \cdot 3 = 5x$

$60 = 5x$

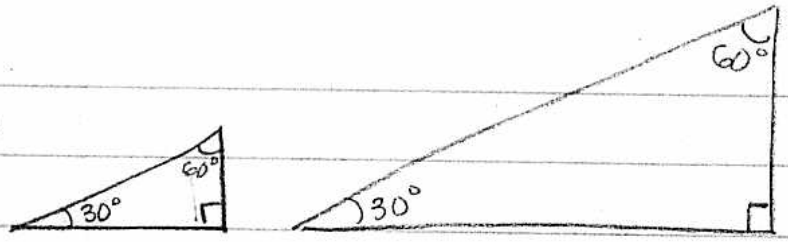
$12 = x$

Similiar Triangles

A model car and a real car are what we call similiar figures (same shape but different sizes.)

Similiar $\triangle$ - two triangles whose angles are congruent and whose sides are proportional. denoted $\triangle 1 \sim \triangle 2$

(ex)



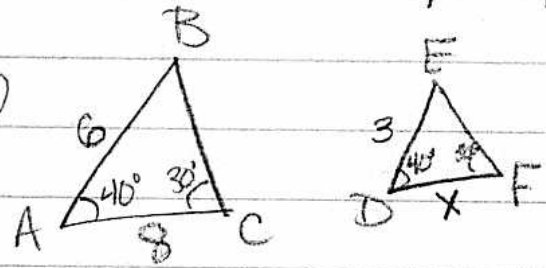
these are similiar △s.

Postulate

If 2 angles are congruent in 2 △ then the △ are similiar.

If 2 △ are similiar, their corresponding sides are proportional.

(ex)



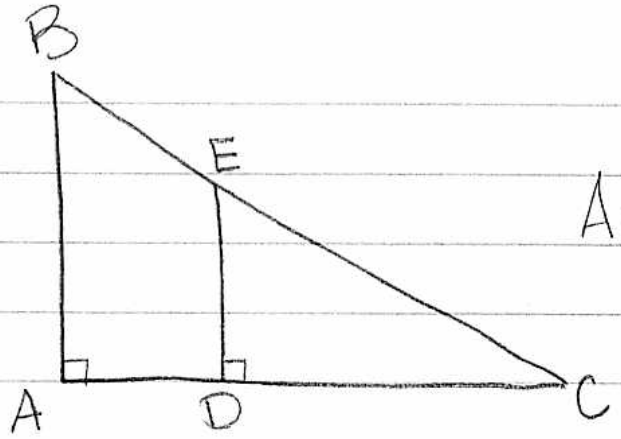
so △ABC ~ △DEF since two of their angles are congruent.

$$\frac{6}{8} = \frac{3}{x} \Longrightarrow 6x = 3 \cdot 8$$
$$6x = 24$$
$$x = 4$$

Note: when naming similiar △s be careful of the order of the letters!

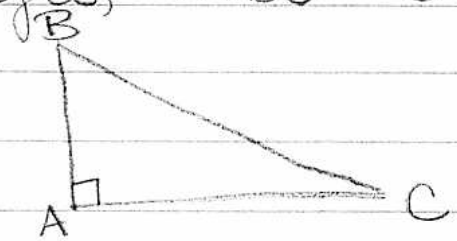
(ex) from above △ABC ~ △DEF but △ABC ≁ DFE

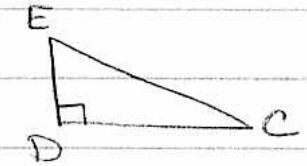
(ex)



Are there any similar △s?

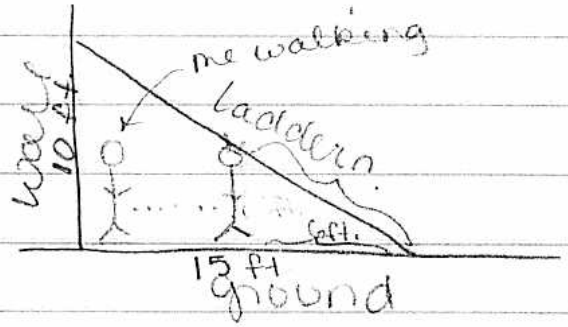
Yes, △ABC ~ DEC because

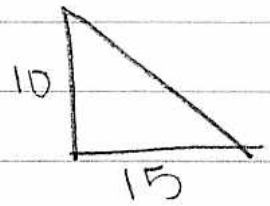


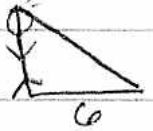


$m(\angle A) = m(\angle D)$ that's one matching angle.
$m(\angle C) = m(\angle C)$ that's two!

(ex.)







how tall am I?

$$\frac{10}{15} = \frac{x}{6}$$

$60 = 15x$

$4 = x$ I'm 4 foot