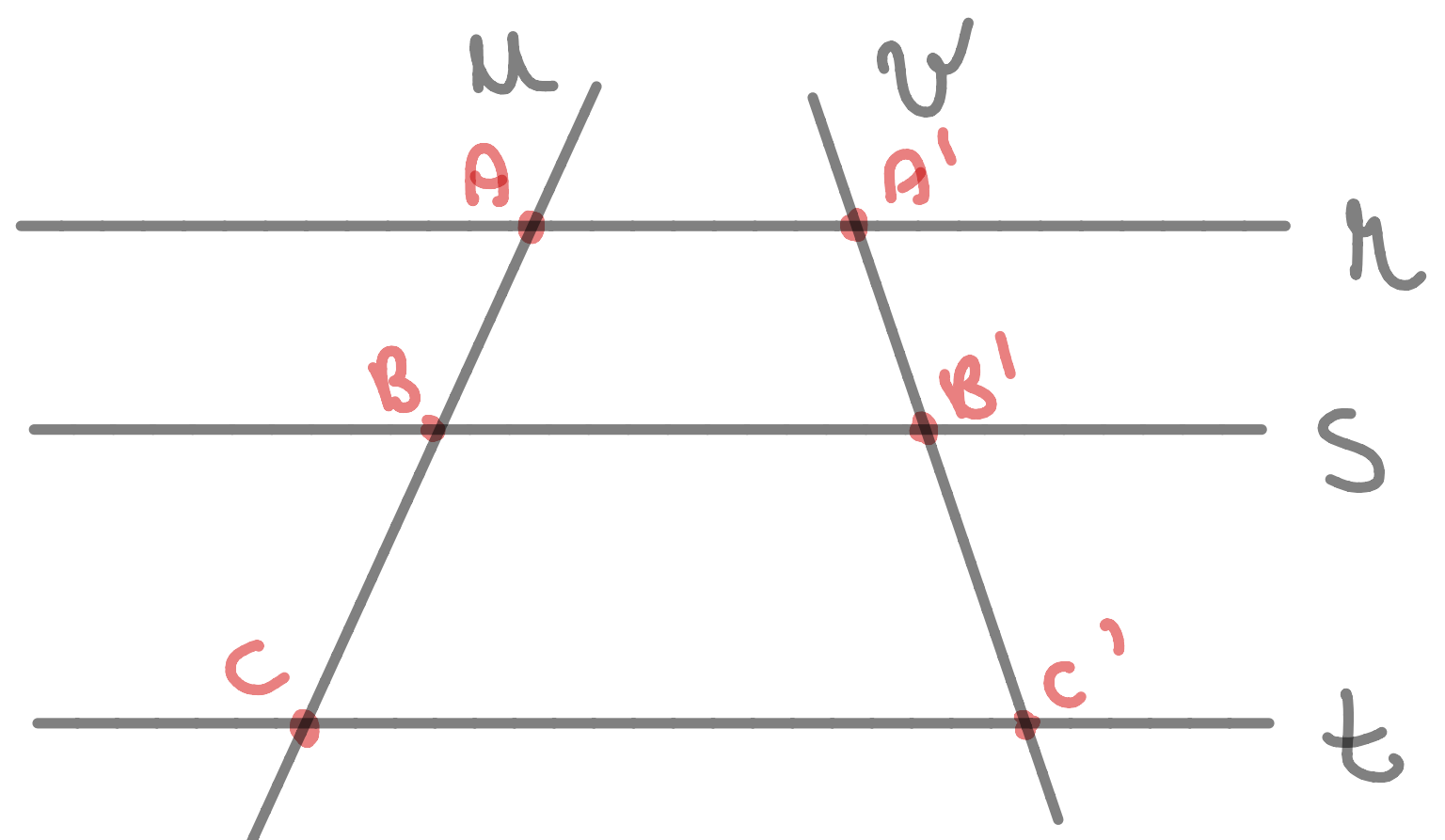


# Teorema de TAUS

"Um feixe de retas paralelas determina sobre duas transversais segmentos proporcionais."

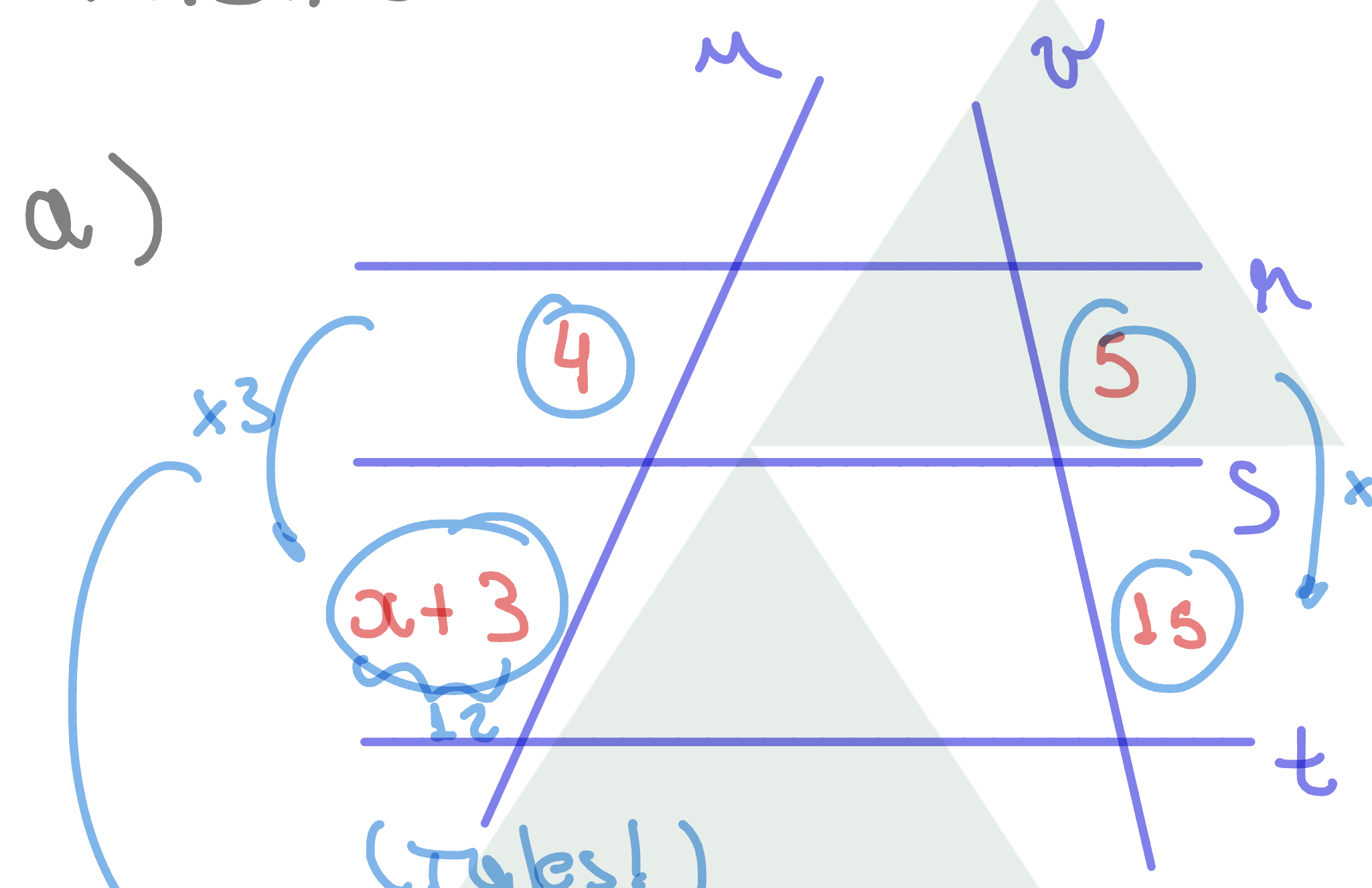


$$\frac{AB}{BC} = \frac{A'B'}{B'C'}$$

$$\frac{AB}{AC} = \frac{A'B'}{A'C'} \quad \frac{BC}{AC} = \frac{B'C'}{A'C'}$$

Thales

Exemplo 1) Determine os valores de  $x$ ,  $y$  e  $z$  sendo  $n \parallel s \parallel t$ .



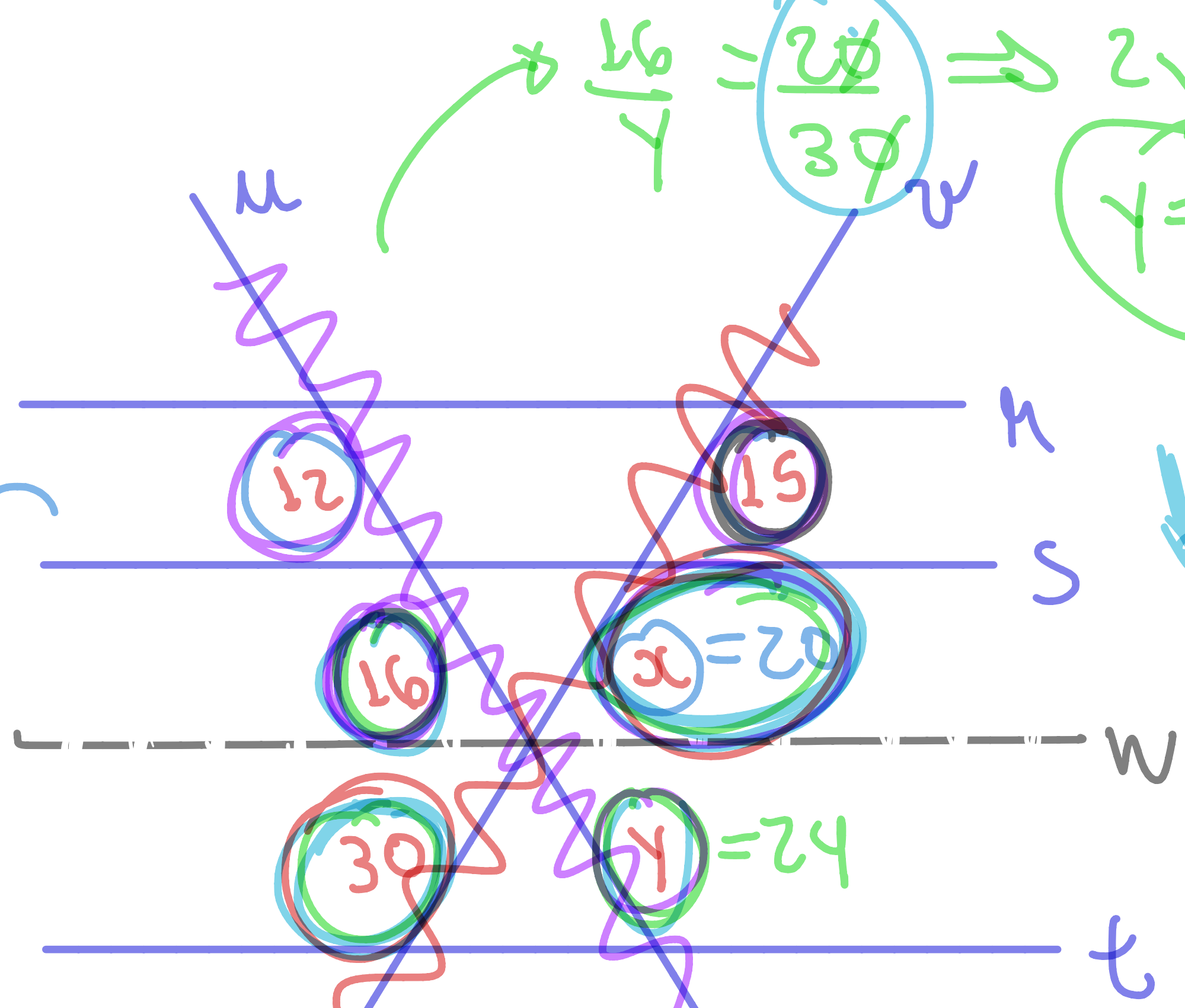
(Takes!)

$$\frac{4}{x+3} = \frac{5}{15}$$

$$x+3 = 12$$

$$x = 9$$

b)



$$\frac{16}{y} = \frac{20}{3y} \Rightarrow 2y = 48$$

$$y = 24$$

$$\frac{3 \sqrt{2}}{4 \sqrt{6}} = \frac{15}{x} \Rightarrow 3x = 60$$

$$x = 20$$

c) CLASSICAL MANTADAY

$AB = 180m$



$$\frac{30}{170} = \frac{x}{180} \Rightarrow 4x = 180$$

$$x = 45m$$

$$\frac{40}{170} = \frac{y}{180} \Rightarrow 3y = 180$$

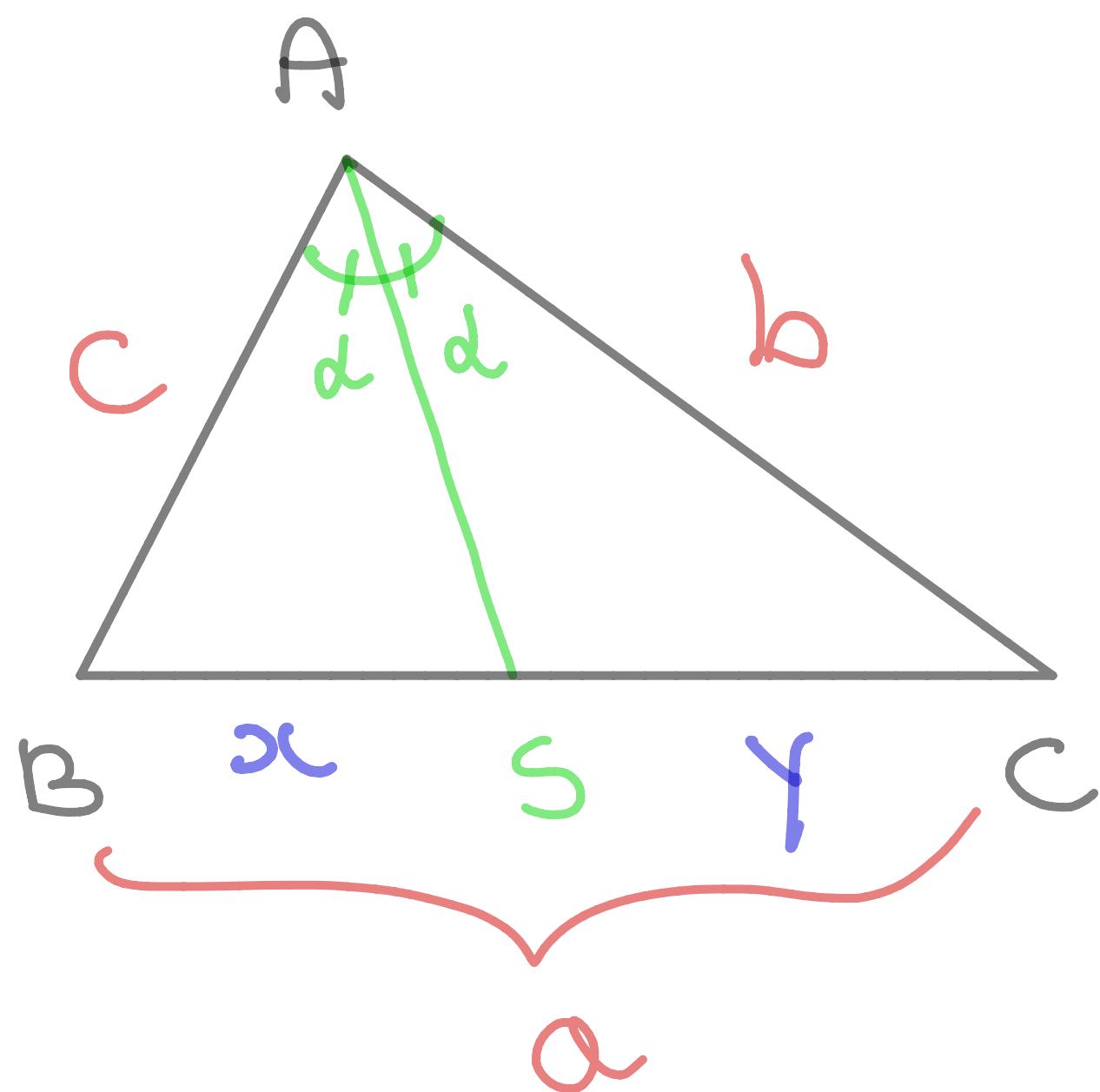
$$y = 60m$$

# Teorema da Bissetriz Interna

(específico) //

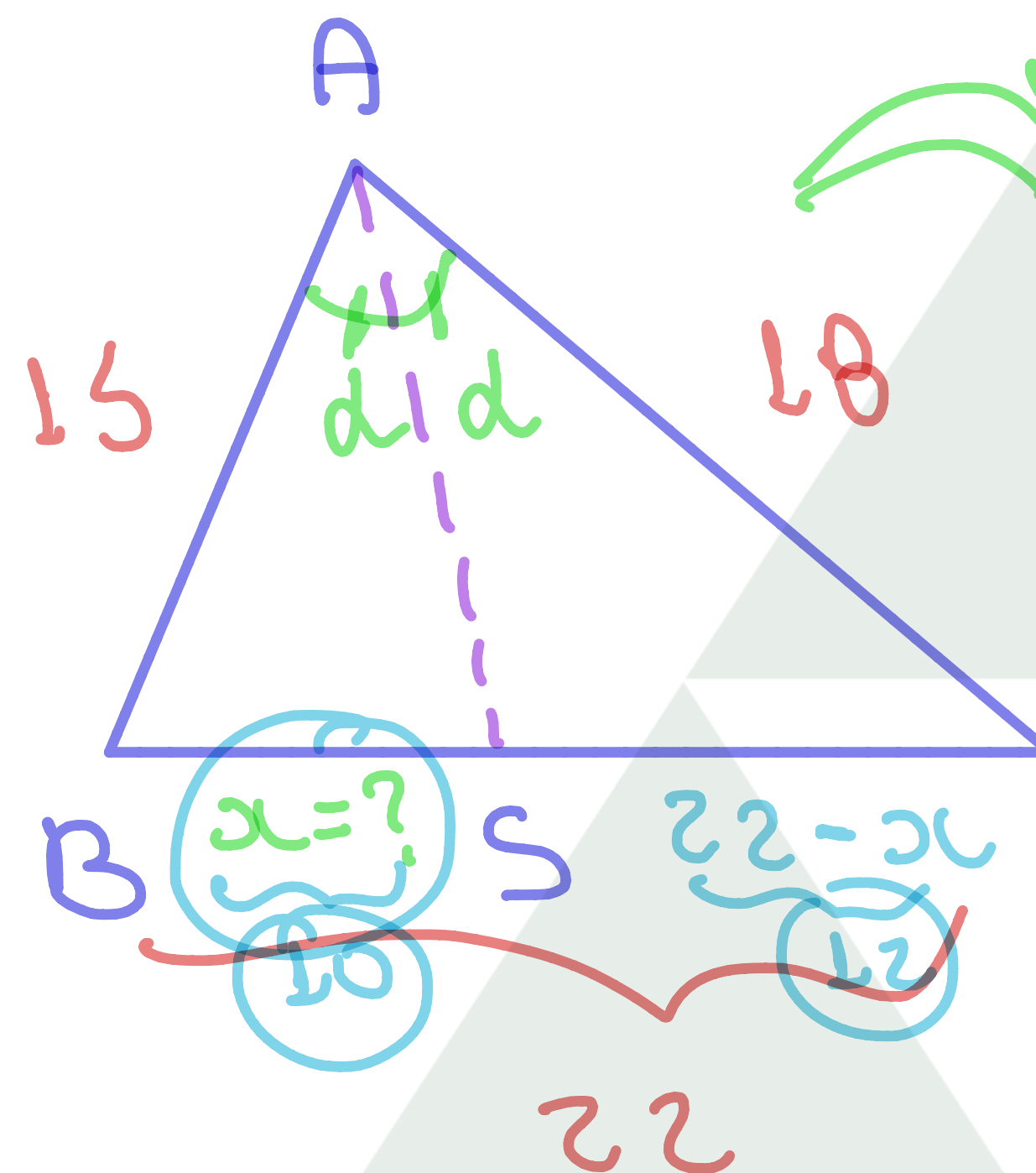
Quando AS bissetriz de  $\hat{A}$  temos:

$$\frac{x}{c} = \frac{y}{b}$$



Exemplo 2  
(UFCK)

• AS é bissetriz de  $\hat{A}$   
• BS = ?



T. BIS. INT.

$$\frac{x}{18} = \frac{22-x}{15}$$

$$6x = 5(22-x)$$

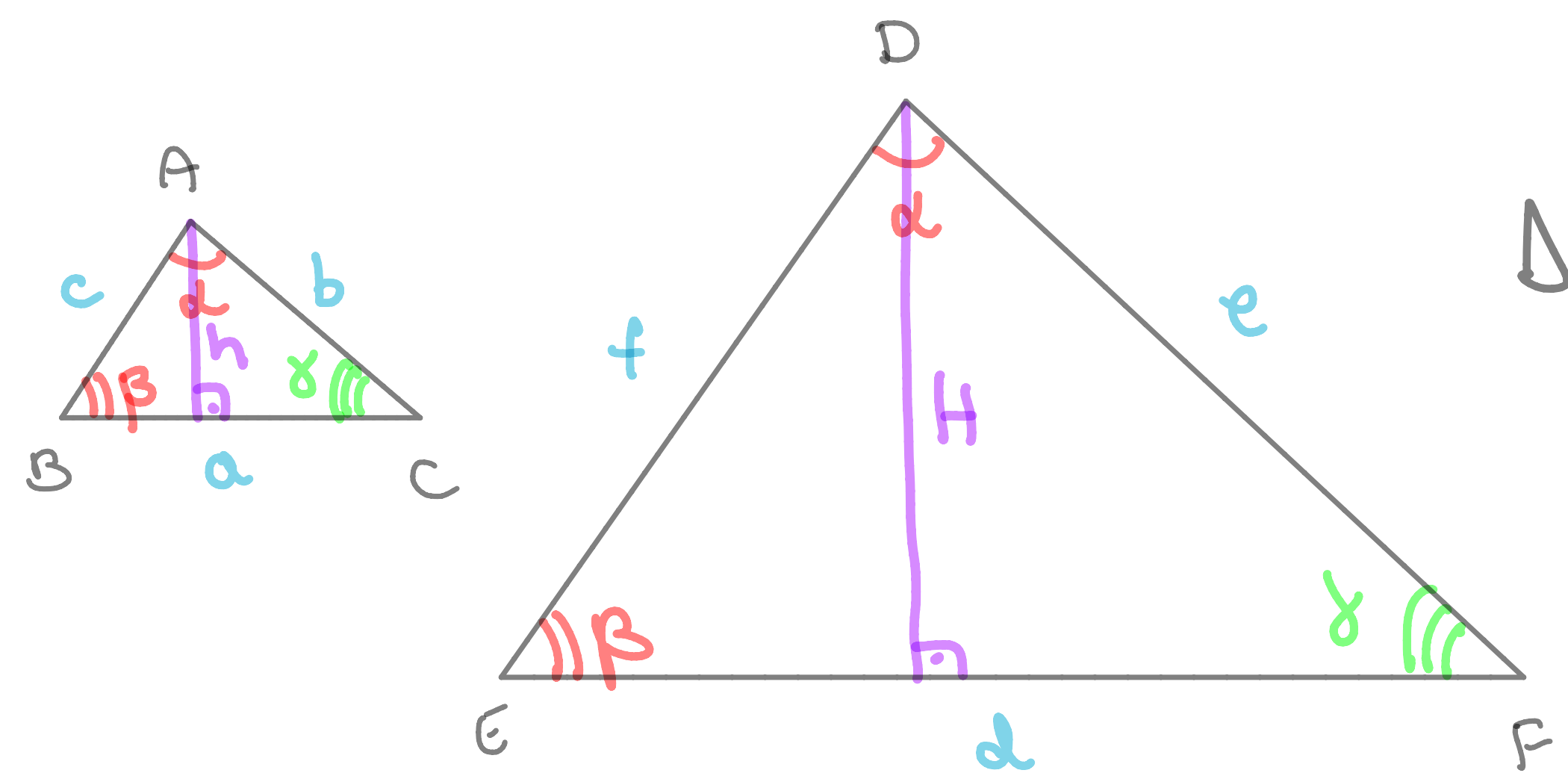
$$6x = 110 - 5x$$

$$11x = 110$$

$$x = 10$$

# Semelhança de $\Delta$ s

(IMPORTANTÍSSIMO!)



$\Delta ABC \sim \Delta DEF \Rightarrow$

A.A (ângulo-ângulo)

$\hat{A} = \hat{D} \text{ e } \hat{B} = \hat{E} \Rightarrow \hat{C} = \hat{F}$

$\frac{a}{d} = \frac{b}{e} = \frac{h}{H} = k = \frac{2p_{\Delta_1}}{2p_{\Delta_2}}$

OBS: É as áreas?

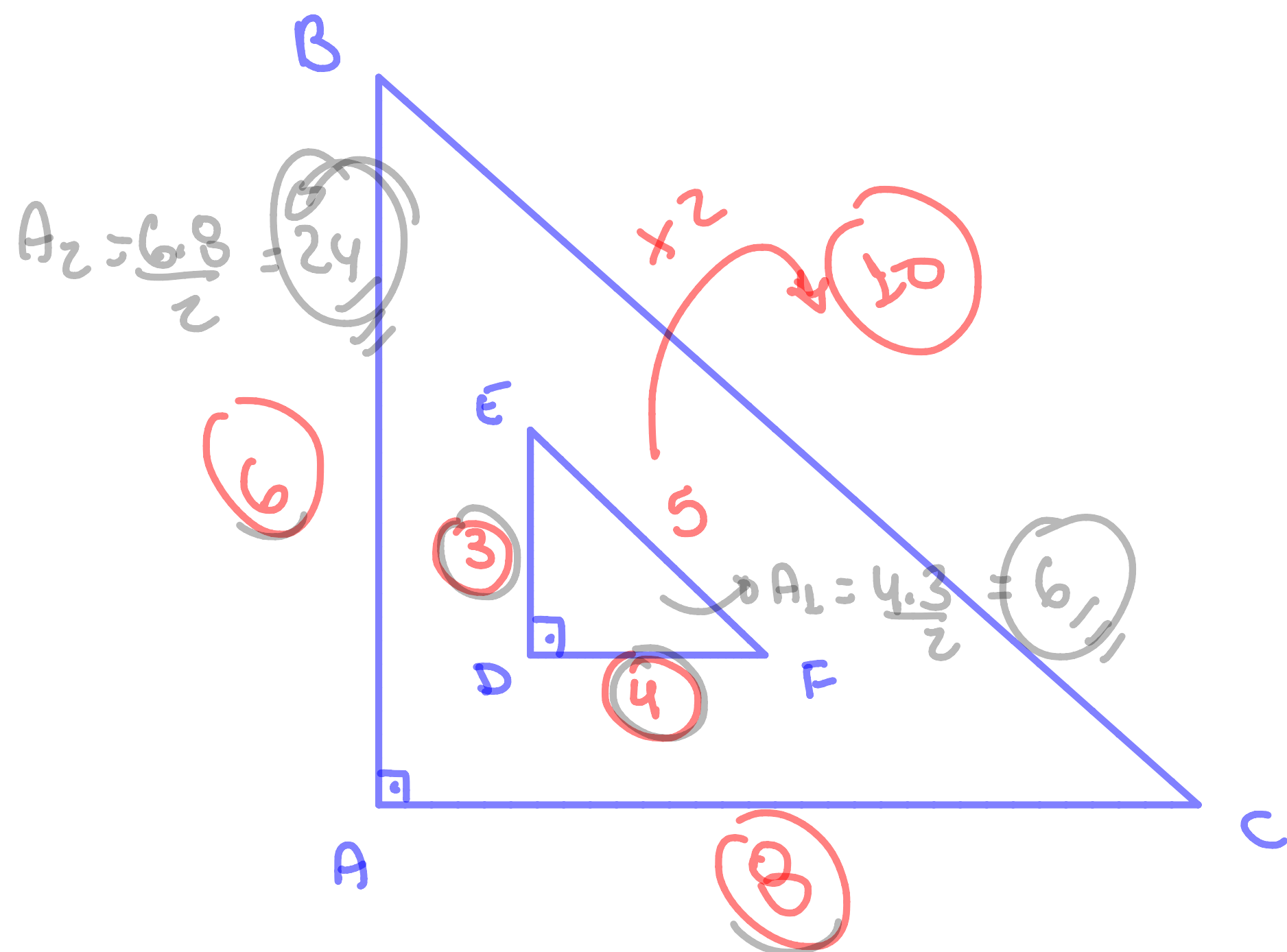
RAZÃO DE SEMELHANÇA!

$\frac{A_{\Delta ABC}}{A_{\Delta DEF}} = k^2$

Por que?

$\frac{\frac{a \cdot h}{2}}{\frac{d \cdot H}{2}} = \frac{a \cdot h}{d \cdot H} = k \cdot k = k^2$

OBS: Na prática temos:



$\triangle ABC \sim \triangle DEF$

$\frac{5}{10} = \frac{3}{6} = \frac{1}{2} = K$

OBS: É as áreas?

$\frac{A_{D1}}{A_{D2}} = K^2 = \left(\frac{1}{2}\right)^2 = \frac{1}{4}$

$A_{D2} = 4 \cdot A_{D1}$