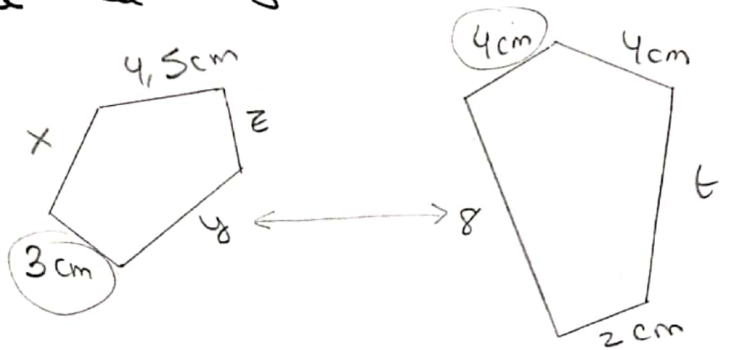
(29) Sabiendo que las siguientes figuras son semejantes, halla la longitud de los lados desconocidos:

a)



razón: $\frac{4}{3} = 1'3$

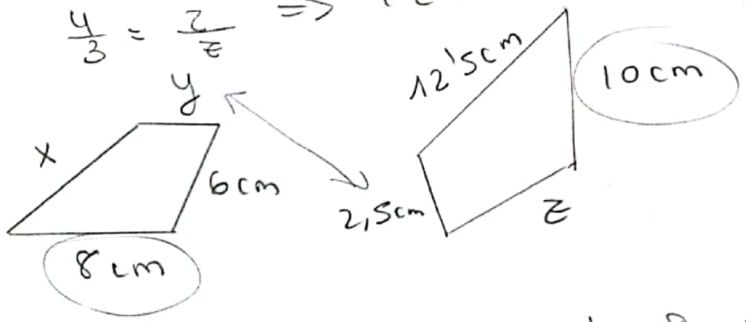
$\frac{4}{3} = \frac{8}{y} \Rightarrow 4y = 24 \Rightarrow \boxed{y = 6}$ cm

$\frac{4}{3} = \frac{4}{x} \Rightarrow 4x = 12 \Rightarrow \boxed{x = 3}$ cm

$\frac{4}{3} = \frac{t}{4'5} \Rightarrow 4 \cdot 4'5 = 3t \Rightarrow t = \frac{18}{3} \Rightarrow \boxed{t = 6}$ cm

$\frac{4}{3} = \frac{z}{t} \Rightarrow 4z = 2 \cdot 3 \Rightarrow t = \frac{6}{4} \Rightarrow \boxed{z = 1'5}$ cm

b)



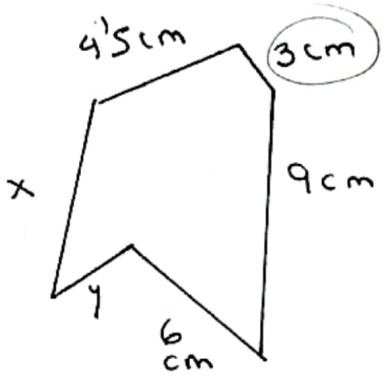
razón: $\frac{10}{8} = 1'25$

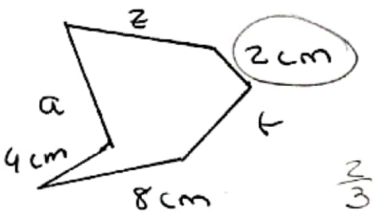
$\frac{10}{8} = \frac{2'5}{y} \Rightarrow 10y = 2'5 \cdot 8 \Rightarrow y = \frac{20}{10} \Rightarrow \boxed{y = 2}$ cm

$\frac{10}{8} = \frac{12'5}{x} \Rightarrow 10x = 12'5 \cdot 8 \Rightarrow x = \frac{100}{10} \Rightarrow \boxed{x = 10}$ cm

$\frac{10}{8} = \frac{z}{6} \Rightarrow 8z = 6 \cdot 10 \Rightarrow z = \frac{60}{8} \Rightarrow \boxed{z = 7'5}$ cm

(29) c)





razón: 0,6

$\frac{2}{3} = \frac{z}{9} \Rightarrow 3z = 18 \Rightarrow \boxed{z = 6\ cm}$

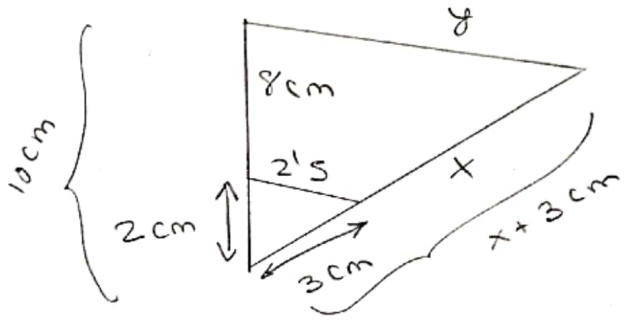
$\frac{2}{3} = \frac{t}{4'5} \Rightarrow 2 \cdot 4'5 = 3t \Rightarrow t = \frac{9}{3} \Rightarrow \boxed{t = 3\ cm}$

$\frac{2}{3} = \frac{8}{x} \Rightarrow 2x = 3 \cdot 8 \Rightarrow x = \frac{24}{2} \Rightarrow \boxed{x = 12\ cm}$

$\frac{2}{3} = \frac{4}{y} \Rightarrow 2y = 3 \cdot 4 \Rightarrow y = \frac{12}{2} \Rightarrow \boxed{y = 6\ cm}$

$\frac{2}{3} = \frac{a}{6} \Rightarrow 3a = 2 \cdot 6 \Rightarrow a = \frac{12}{3} \Rightarrow \boxed{a = 4\ cm}$

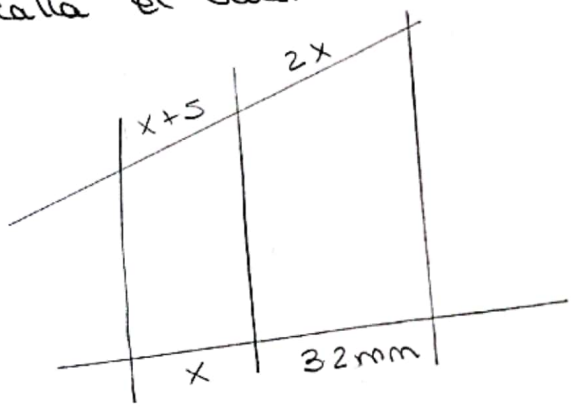
(30) Halla los valores de x e y de la siguiente construcción:



$\frac{8}{2} = \frac{x}{3} \Rightarrow 2x = 3 \cdot 8 \Rightarrow x = \frac{24}{2} \Rightarrow \boxed{x = 12\ cm}$

$\frac{2}{2'5} = \frac{10}{y} \Rightarrow 2y = 2'5 \cdot 10 \Rightarrow y = \frac{25}{2} \Rightarrow \boxed{y = 12'5\ cm}$

(31) Halla el valor de x en la siguiente construcción:



$\frac{x+5}{x} = \frac{2x}{32}$

$32(x+5) = 2x^2$

$32x + 160 = 2x^2$

$2x^2 - 32x - 160 = 0$

$x = \frac{-(-32) \pm \sqrt{(-32)^2 - 4 \cdot 2 \cdot (-160)}}{2 \cdot 2}$

$\boxed{x = 20}$

$x = -4$ NO PORQUE ES UNA LONGITUD