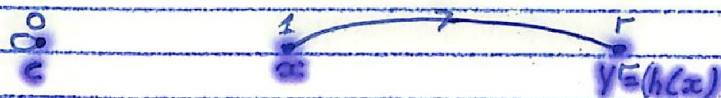


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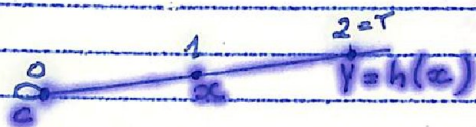
Laboratório de Matemática - 1972

Homotetias

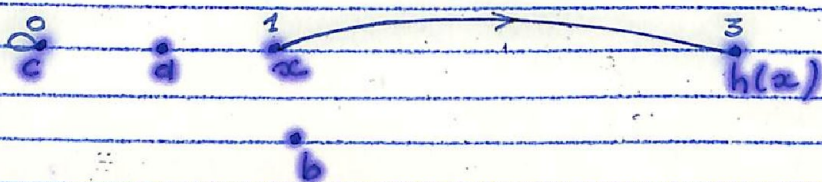
Seja c um ponto fixo de \mathbb{T} e x outro ponto de \mathbb{T} do qual queremos achar a imagem pela homotetia de centro c e razão r , sendo r um n.º real. A imagem do ponto x é o ponto y de abscissa r que é encontrado associando-se zero (0) a c e um (1) a x , como mostra a figura abaixo.



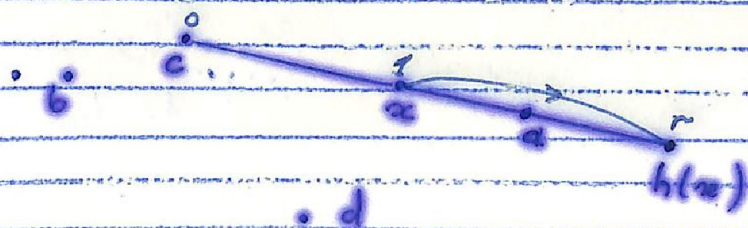
Se $r=2$, teremos:



Encontre as imagens dos pontos a e b pela homotetia de centro c e razão 3 , representada abaixo:



Encontre as imagens dos pontos a , b e d pela homotetia de centro c e razão r ($h(c,r)$), representada abaixo:



d)

$$4) h_3 \circ h_4, h_4 \circ h_3$$



$$5) h_3 \circ h_5, h_5 \circ h_3$$



$$6) h_6 \circ h_7, h_7 \circ h_6$$



$$7) h_2 \circ h_5, h_5 \circ h_2$$



$$8) (h_3 \circ (h_5) \circ h_6, h_3 \circ (h_5 \circ h_6)$$



Definição:

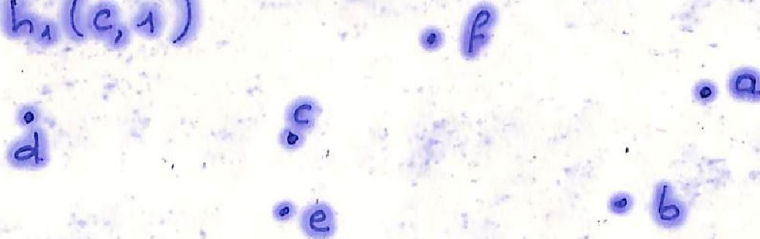
Insti t

Homotetia de centro c e razão r , anotada por $h(c,r)$ é a transformação de Π em Π' , tal que:

$\forall x \in \Pi$ $\left\{ \begin{array}{l} x=c, h(x)=c \\ x \neq c, h(x)=y \end{array} \right.$, ponto de abscissa r que se encontra graduando a reta cx marcando 0 em c e 1 em x .

Encontre as imagens dos pontos representados abaixo pelas homotetias indicadas

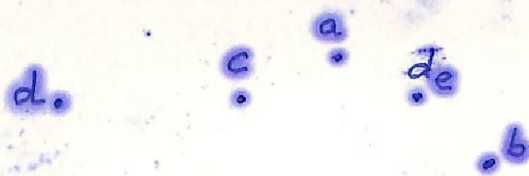
1) $h_1(c, 1)$



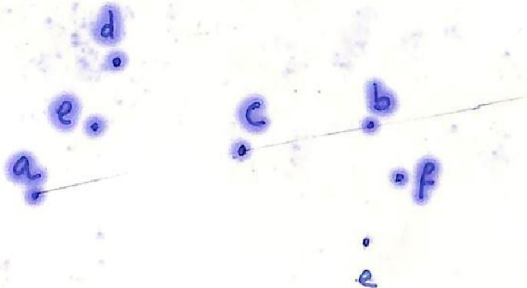
2) $h_2(c, -1)$



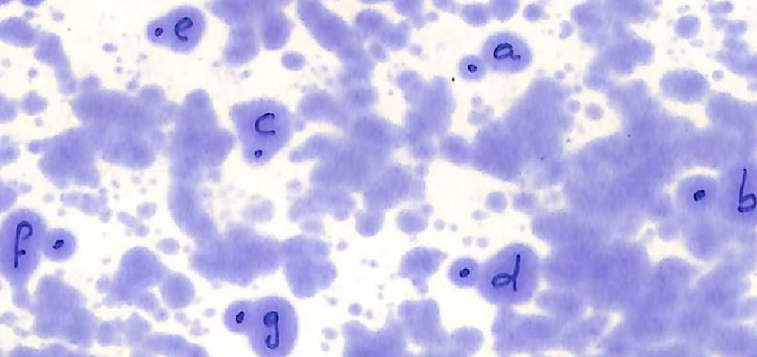
3) $h_3(c, \frac{1}{3})$ e $h_4(c, 3)$



4) $h_5(c, -\frac{1}{4})$ e $h_6(c, -4)$



5) $h_c(c, 0)$



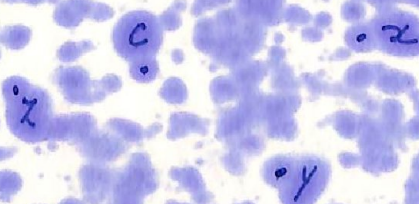
Composição de homotetias de mesmo centro

Sejam

$h_1(c, 0)$, $h_2(c, 1)$, $h_3(c, 2)$, $h_4(c, \frac{1}{2})$,
 $h_5(c, -2)$, $h_6(c, 3)$, $h_7(c, -3)$

Encontre as imagens dos pontos representados
abaixo pelas homotetias indicadas.

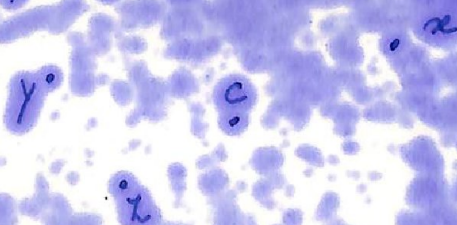
1) $h_2 \circ h_1$, $h_1 \circ h_2$, $h_1 \circ h_1$



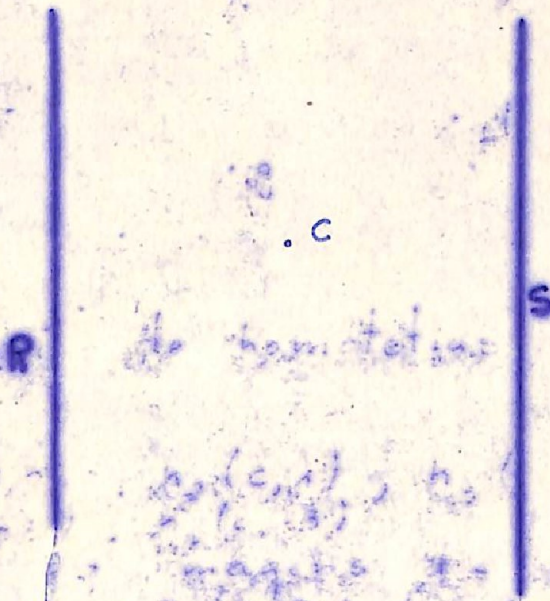
2) $h_2 \circ h_3$, $h_3 \circ h_2$



3) $h_2 \circ h_7$, $h_7 \circ h_2$



b)



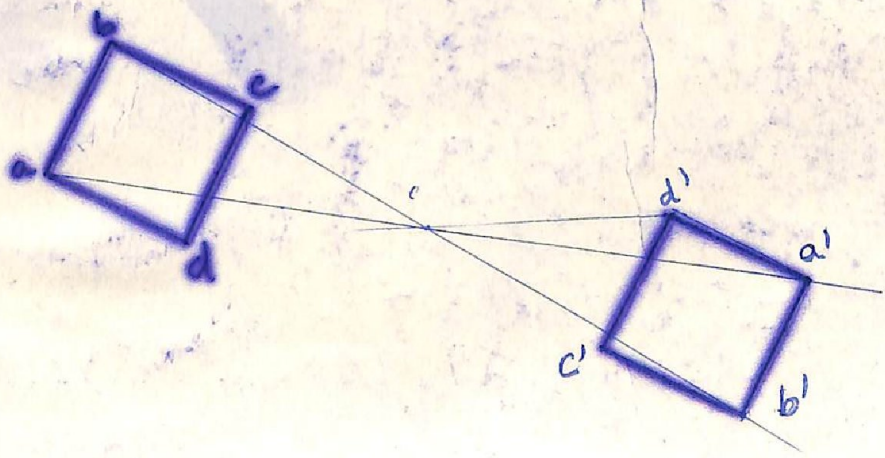
c)



d)



e) Encontre o centro da simetria seguinte:



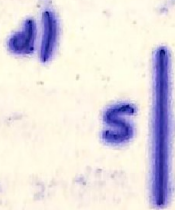
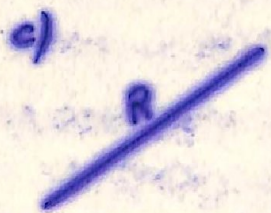
Instituto de Educação "General Floriano de Azevedo"
 Curso de Extensão - Didática de Matemática

1972

Prof. Janio dos S. Kazmierczak

Exercícios

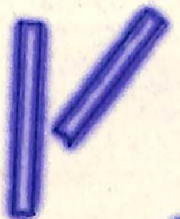
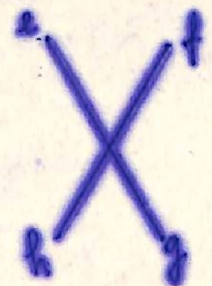
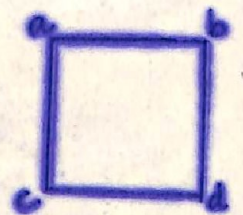
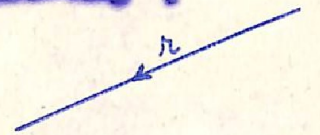
1. Represente as imagens das seguintes figuras pelas transformações indicadas:



a)

b)

c)



2. Represente as imagens dos seguintes entes representados, pela simetria de centro.

