

Óptica Geométrica – FUVEST 2ª fase: Caderno de respostas

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1.

PROVA

(vista de cima)

Régua

$L = 1,5\text{m}$

E

O

D

Escala

0 1m

Parede Espelho

θ'

0	
1	
2	
3	
4	

0	
1	OK
2	
3	
4	

2.

PROVA

R_0

N

x

45°

45°

45°

45°

b) $n_1 \cdot \sin i = n_2 \cdot \sin r$

$L \cdot \sin 70^\circ = \frac{3 \cdot 10^8}{v} \cdot \sin 45^\circ$

$1 \cdot 0,34 = \frac{3 \cdot 10^8}{v} \cdot 0,70$

$\therefore v \cong 2,2 \cdot 10^8 \text{ m/s}$

c) $x = R\sqrt{2}$

$\therefore x = 2,2 \cdot 10^{-2} \sqrt{2} \text{ m}$

$\Delta S = 4x$

$\therefore \Delta S = 4 \cdot 2,2 \cdot 10^{-2} \sqrt{2} \text{ m}$

$v = \frac{\Delta S}{\Delta t}$

$2,2 \cdot 10^8 = \frac{4 \cdot 2,2 \cdot 10^{-2} \sqrt{2}}{\Delta t}$

$\therefore \Delta t \cong 4\sqrt{2} \cdot 10^{-10} \text{ s}$

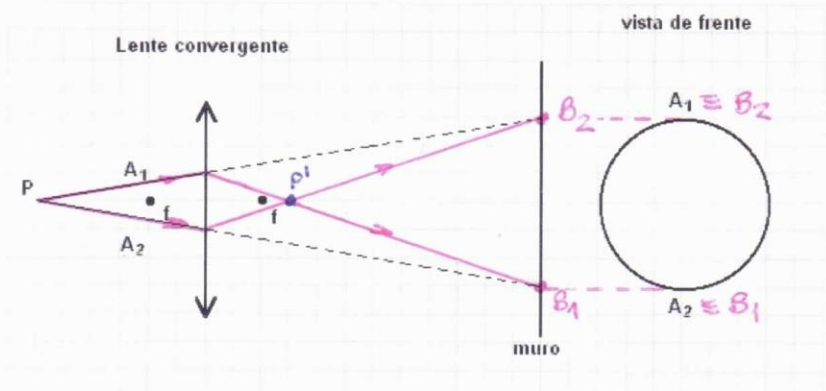
0	
1	
2	
3	
4	

0	
1	OK
2	
3	
4	

3.

PROVA

FUVEST



a) $\frac{1}{f} = \frac{1}{p} + \frac{1}{p'}$

$\frac{1}{2} = \frac{1}{6} + \frac{1}{p'}$

$\therefore p' = 3 \text{ unid.}$

b) A região iluminada é circular e tem o mesmo raio da região iluminada sem a lente.

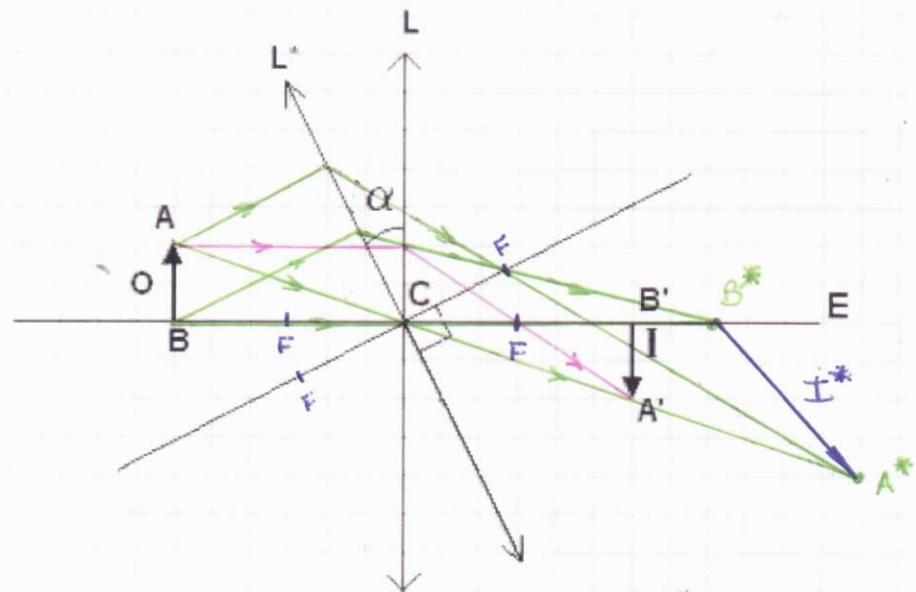
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4.

PROVA

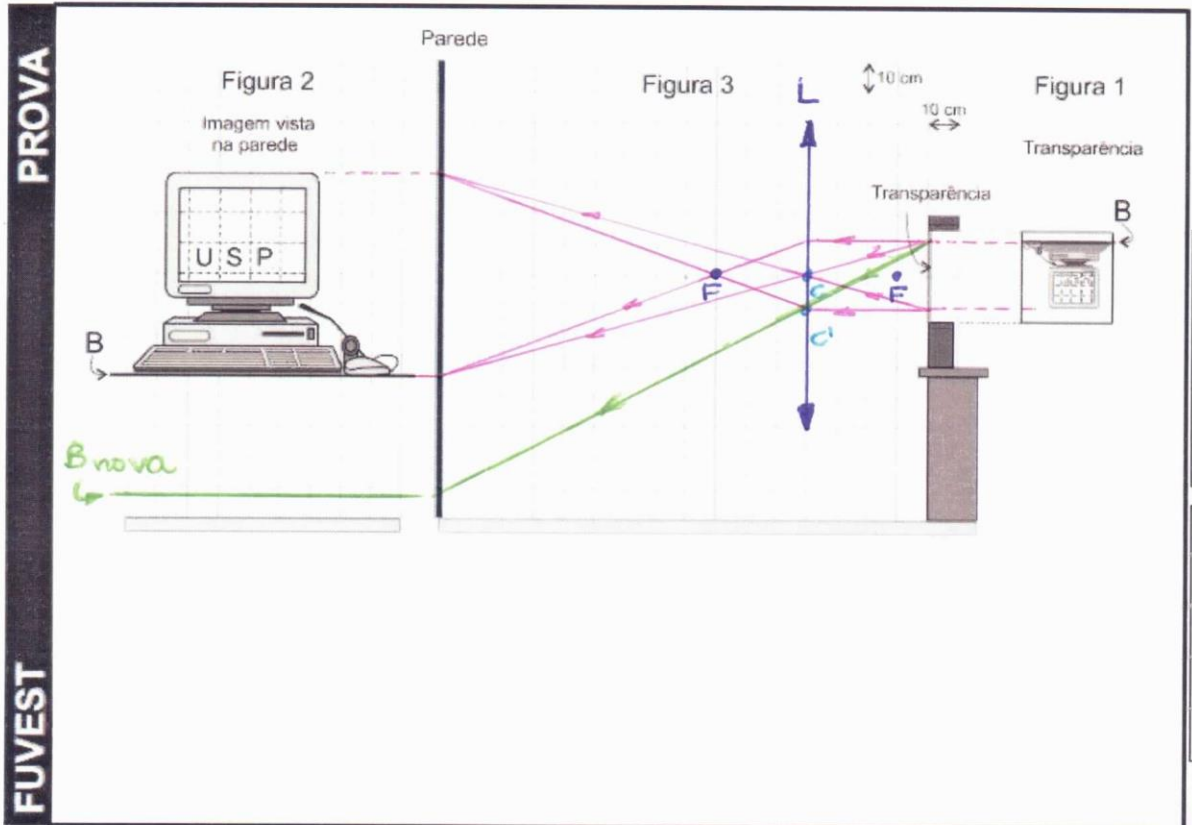
FUVEST



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<input type="checkbox"/>	3
<input type="checkbox"/>	4

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<input type="checkbox"/>	1
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7.

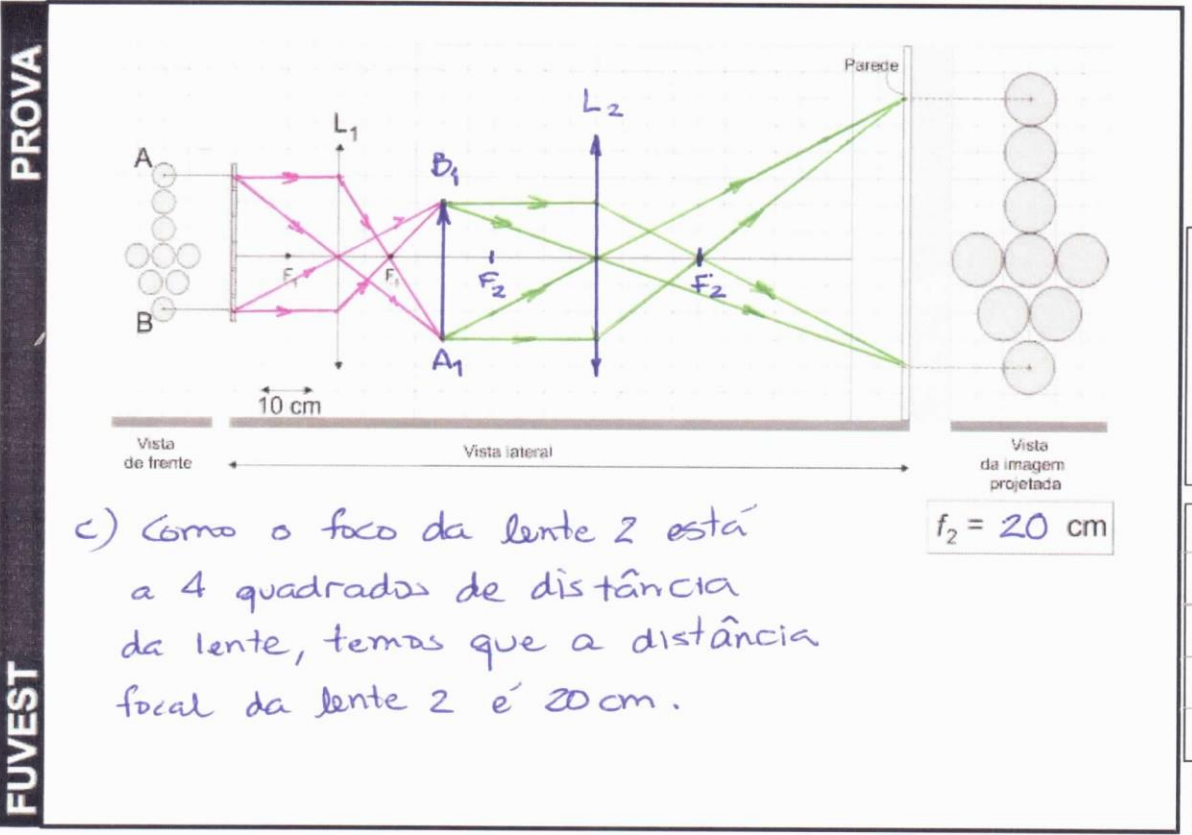


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<input type="checkbox"/>	3
<input type="checkbox"/>	4

<input type="checkbox"/>	0
<input type="checkbox"/>	1
<input type="checkbox"/>	2
<input type="checkbox"/>	3
<input type="checkbox"/>	4

OK

8.



c) Como o foco da lente 2 está a 4 quadrados de distância da lente, temos que a distância focal da lente 2 é 20 cm.

<input type="checkbox"/>	0
<input type="checkbox"/>	1
<input type="checkbox"/>	2
<input type="checkbox"/>	3
<input type="checkbox"/>	4

<input type="checkbox"/>	0
<input type="checkbox"/>	1
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<input type="checkbox"/>	3
<input type="checkbox"/>	4

OK

9.

PROVA

FUVEST

FIGURA 1

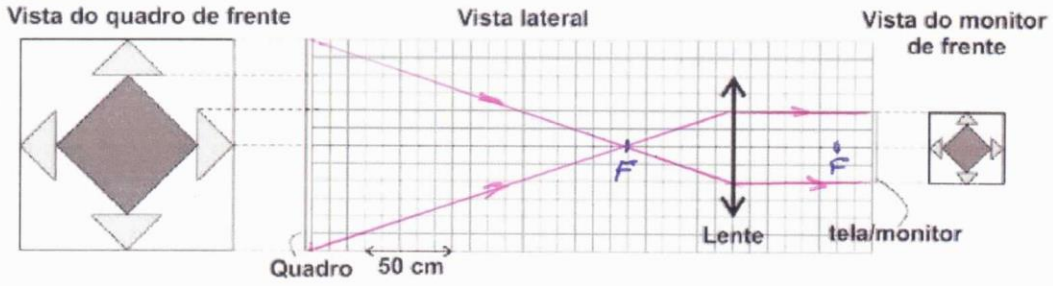
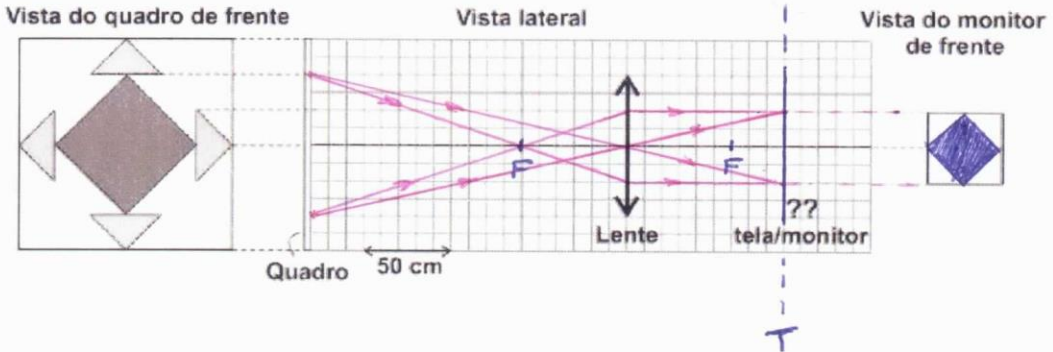


FIGURA 2



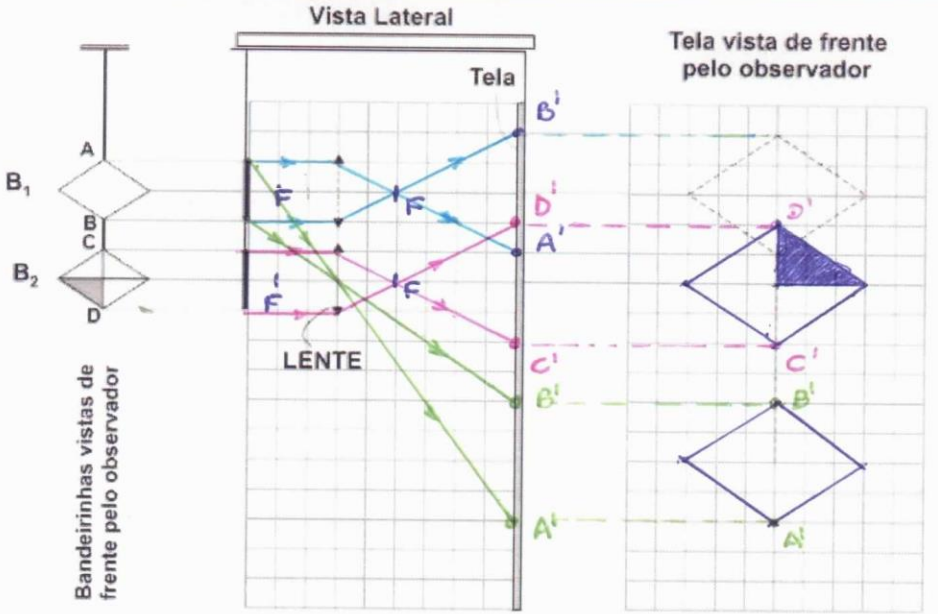
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<input type="checkbox"/>	1
<input type="checkbox"/>	2
<input type="checkbox"/>	3
<input type="checkbox"/>	4
<input type="checkbox"/>	OK

10.

PROVA

FUVEST



<input type="checkbox"/>	0
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<input type="checkbox"/>	2
<input type="checkbox"/>	3
<input type="checkbox"/>	4

<input type="checkbox"/>	0
<input type="checkbox"/>	1
<input type="checkbox"/>	2
<input type="checkbox"/>	3
<input type="checkbox"/>	4
<input type="checkbox"/>	OK