

# Optics

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Journal Club

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## Exceptions

- Focus
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- Diffraction optical elements  
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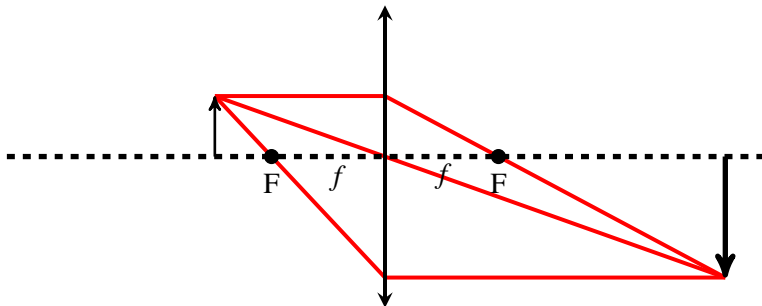
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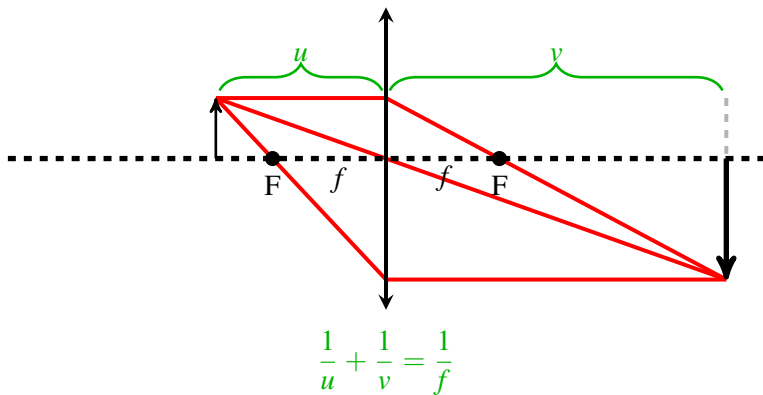
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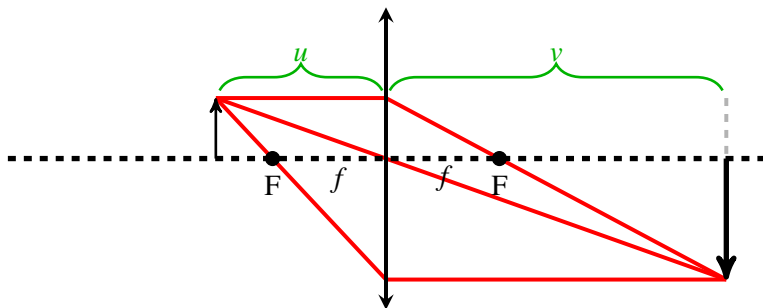
# Ideal Lens



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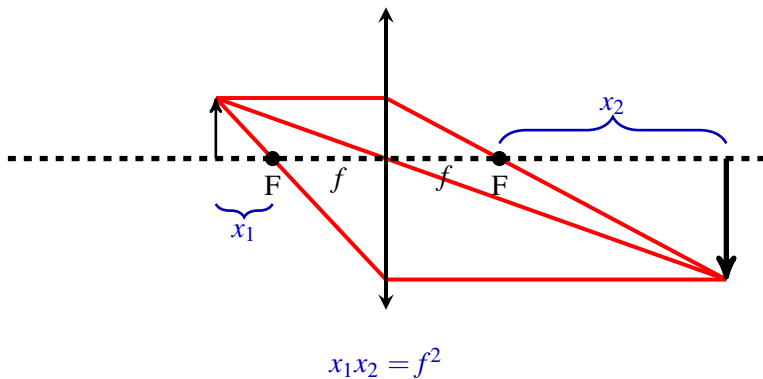


$$\frac{1}{u} + \frac{1}{v} = \frac{1}{f}$$

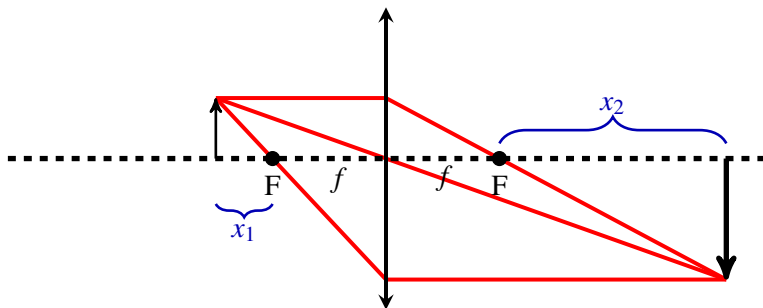
$$M = \frac{v}{u}$$



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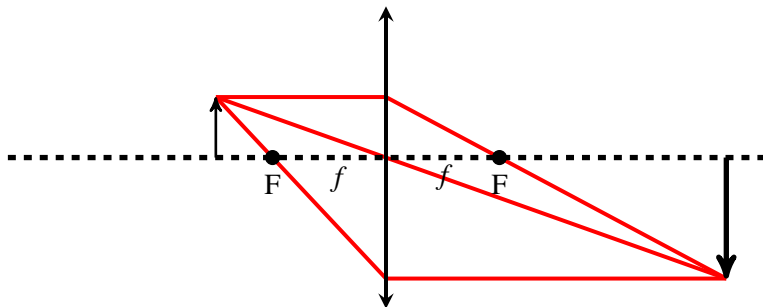
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$$x_1 x_2 = f^2$$

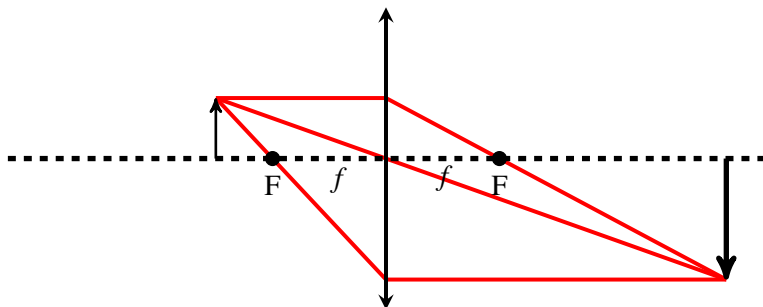
$$M = \frac{f}{x_1} = \frac{x_2}{f} = \sqrt{\frac{x_2}{x_1}}$$

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### Conjugate plane: Perfect image under ray optics

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Conjugate plane: Perfect image under ray optics  
Principal planes: Conjugate plane where  $M = 1$

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