

Corrección de defectos ópticos

Ec. fundamental de las lentes delgadas

$$\frac{1}{f} = \frac{1}{s} - \frac{1}{s'}$$

$$\text{Potencia: } P = \frac{1}{f'}$$

1b)

$$s = -\infty$$

$$s' = -1\text{m}$$

$$\frac{1}{f} = -\frac{1}{\infty} + \frac{1}{1} \rightarrow \boxed{f = 1\text{m}}$$

$$\text{Potencia: } \boxed{P = \frac{1}{f'} = -\frac{1}{1} = -1 \text{ dioptría}}$$

1c)

$$s = -\infty$$

$$s' = -0,8\text{m}$$

$$\frac{1}{f} = -\frac{1}{\infty} + \frac{1}{0,8} \rightarrow \boxed{f = 0,8\text{m}}$$

$$\boxed{P = \frac{1}{f'} = -\frac{1}{0,8} = -1,25 \text{ dioptrías}}$$

2b)

$$s = -0,25\text{m}$$

$$s' = -0,8\text{m}$$

$$\frac{1}{f} = -\frac{1}{0,25} + \frac{1}{0,8} = -2,75 \rightarrow \boxed{f = -0,36\text{m}}$$

$$\boxed{P = \frac{1}{f'} = 2,75 \text{ dioptrías}}$$

2c)

$$s = -0,25\text{m}$$

$$s' = -1\text{m}$$

$$\frac{1}{f} = -\frac{1}{0,25} + 1 = -3 \rightarrow \boxed{f = -0,33\text{m}}$$

$$\boxed{P = \frac{1}{f'} = 3 \text{ dioptrías}}$$

3b)

$$s = -0,25\text{m}$$

$$s' = -0,5\text{m}$$

$$\frac{1}{f} = -\frac{1}{0,25} + \frac{1}{0,5} = -2 \rightarrow \boxed{f = -0,5\text{m}}$$

$$\boxed{P = \frac{1}{f'} = 2 \text{ dioptrías}}$$

3c)

$$s = -0,25\text{m}$$

$$s' = -1,5\text{m}$$

$$\frac{1}{f} = -\frac{1}{0,25} + \frac{1}{1,5} = -3,33 \rightarrow \boxed{f = -0,3\text{m}}$$

$$\boxed{P = \frac{1}{f'} = 3,33 \text{ dioptrías}}$$