

Objective plus Relay

$$f_o = 100 \text{ mm}$$

$$\phi_o = .01 / \text{mm}$$

$$f_r = 25 \text{ mm}$$

$$\phi_r = .04 / \text{mm}$$

$$t = 150$$

For a distant object, the relay is used at 1:1 conjugates. A real image is formed 50 mm to the right of the relay lens - at the rear focal point of the system.

$$\phi_s = \phi_o + \phi_r - \phi_o \phi_r t$$

$$\phi_s = -.01 / \text{mm}$$

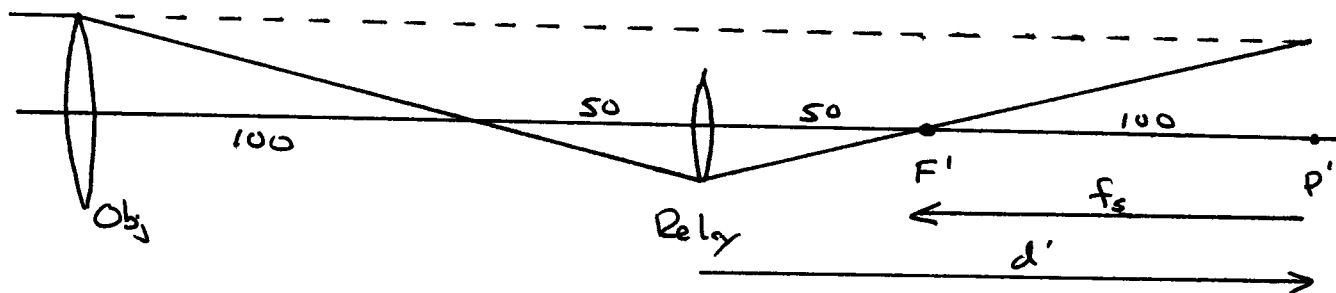
$$\underline{f_s = -100 \text{ mm}}$$

Negative ??

Look at P' :

$$d' = - \frac{\phi_o}{\phi_s} t$$

$$\underline{d' = + 150 \text{ mm}}$$



The relay lens changes the sign of the marginal ray angle, causing P' to be outside F' .