Answer on Question #71614-Physics-Optics

A converging lens of focal length 24 cm is placed next to a converging lens of length 50 cm. What is the effective focal length for this combination?

Solution

$$\frac{1}{f} = \frac{1}{f_1} + \frac{1}{f_2}$$

The effective focal length for this combination is

$$f = \frac{f_1 f_2}{f_1 + f_2}$$

$$f = \frac{(50)(24)}{(50) + (24)} = 16.2\ cm.$$

Answer: 16.2 cm.