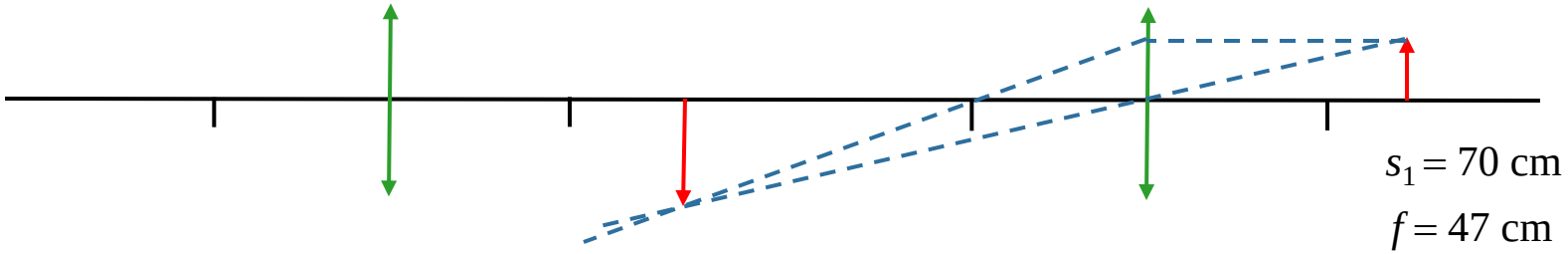
Multiple Lenses Exercises

Two converging lenses are set up as shown. The focal length of each lens is 47 cm. The object is a light bulb located 70 cm in front of the first lens.



What is the nature of the image from the first lens alone?

A) REAL
UPRIGHT

B) REAL
INVERTED

C) VIRTUAL
UPRIGHT

D) VIRTUAL
INVERTED

EQUATIONS

$$\frac{1}{S'} = \frac{1}{f} - \frac{1}{S} \rightarrow S' = \frac{f\,S}{S - f}$$

s > f → s' > 0 → real image

$$M = -\frac{S'}{S} \rightarrow M < 0 \rightarrow \text{inverted image}$$

PICTURES

Draw Rays as above.