Reminders 03-26-08:

-We will meet for lab this week! We will discuss image formation by mirrors (Ch 34) during lab!!

Outline:

-Refraction off a Sphere
-Lenses
-Image Formation with Lenses
-Ray Tracing

A distant object forms an image 25 cm in front of a double convex lens. Where will the image be located if the object is placed 15 cm from the lens? Assuming the object is 2 cm high, what is the image height? Draw the ray-diagram.

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

$s = \infty$

$s' = f \quad f = 25\text{ cm}$

$$\frac{1}{15} + \frac{1}{s'} = \frac{1}{f}$$

$$\frac{1}{s'} = \frac{1}{f} - \frac{1}{15} = \frac{1}{25} - \frac{1}{15}$$

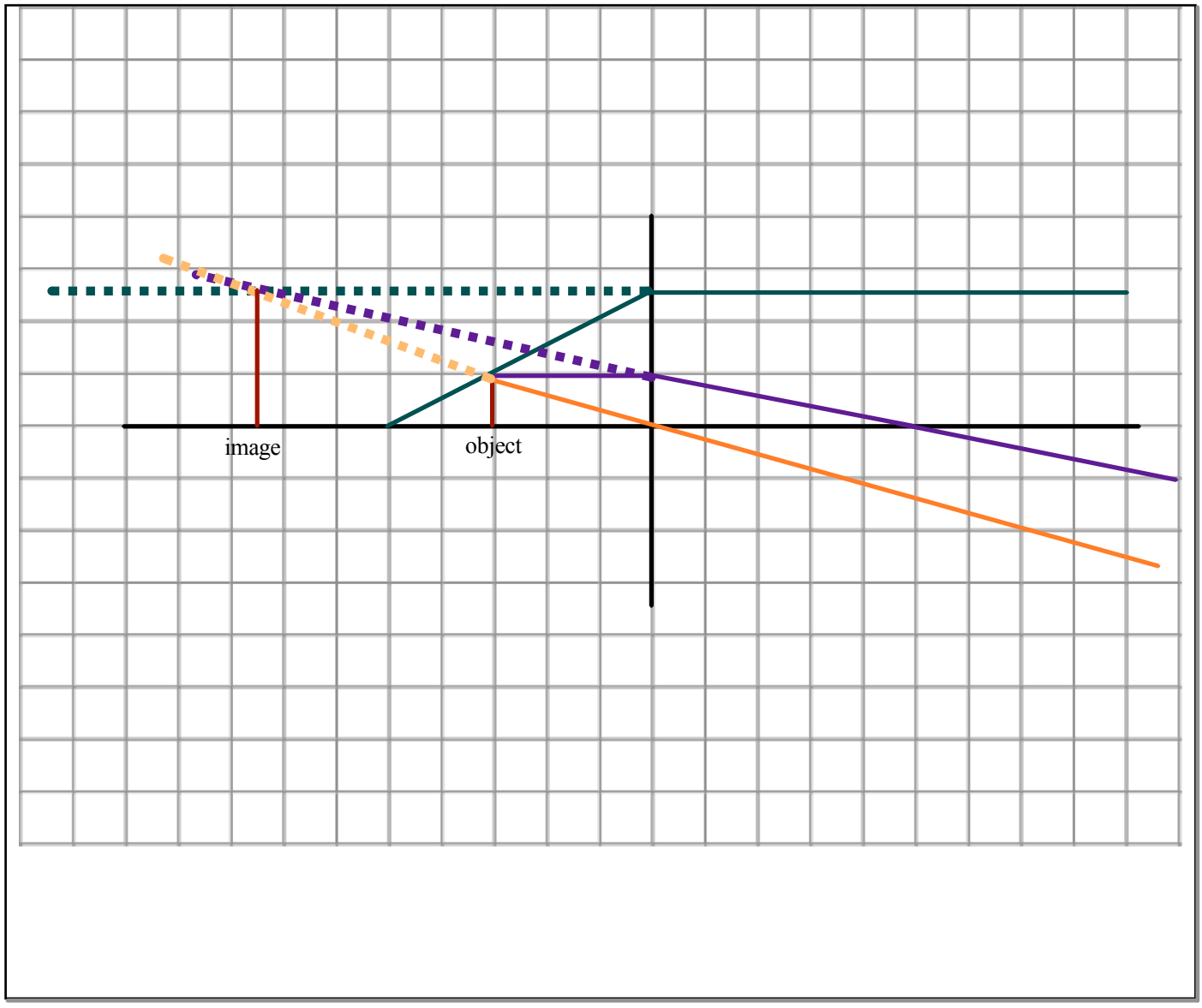
$$\frac{1}{s'} = \frac{3}{75} - \frac{5}{75} = \frac{-2}{75}$$

$s' = -37.5\text{ cm}$

virtual image

$$M = -\frac{s'}{s} = -\frac{-37.5}{15} = 2.5 = \frac{h_i}{h_o}$$

$h_i = (2.5)(2) = 5.0\text{ cm}$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