

Quiz #3 Formulas

$$n = \frac{c}{v}$$

$$n_1 \sin \theta_1 = n_2 \sin \theta_2$$

$$f = \frac{r}{2}$$

$$\frac{1}{d_o} + \frac{1}{d_i} = \frac{1}{f}$$

$$m = \frac{h_i}{h_o} = -\frac{d_i}{d_o}$$

$$m_{ang} = \frac{\theta'}{\theta}$$

$$m_{ang} = \frac{N}{f}$$

$$m_{ang} = \frac{N}{f} + 1$$

Notes:

- 1) You do not need to know the lensmaker's equation, $\frac{1}{f} = (n-1)\left(\frac{1}{R_1} + \frac{1}{R_2}\right)$ or the simplified form for a symmetric lens, $f = \frac{R}{2(n-1)}$, but you should know that, like for a mirror, a smaller R leads to a shorter focal length, and that a greater n leads to a shorter focal length.
- 2) I will not give you the formula for the critical angle because I think you should be able to use Snell's Law to find the critical angle.