Laws of propagation of light:

1. The law of rectilinear propagation of light: the tendency of light to only travel in straight lines in a homogenous transparent medium
2. The law of reflection of light: the angle of incidence equals the angle of reflection. The incident ray, the refracted ray and the normal to the surface at the point of incidence all lie in one plane.
3. The law of refraction of light. This law, credited to Willebrord Snell, states that the ratio of the sine of the angle of incidence, *i*, to the sine of the angle of refraction, *r*, is equal to the ratio of the speed of light in the original medium, v_i, to the speed of light in the refracting medium, v_r, or

$$\frac{\sin i}{\sin r} = \frac{v_i}{v_r}$$

Snell's law is often stated in terms of the indexes of refraction of the two media rather than the speeds of light in the media. The index of refraction, *n*, of a transparent medium is a direct measure of its optical density and is equal to the ratio of the speed of light in a vacuum, *c*, to the speed of light in the medium:

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

Using indexes of refraction, Snell's law takes the form sin i /sin r = n r / n i

$$\frac{\sin i}{\sin r} = \frac{n_r}{n_i}$$