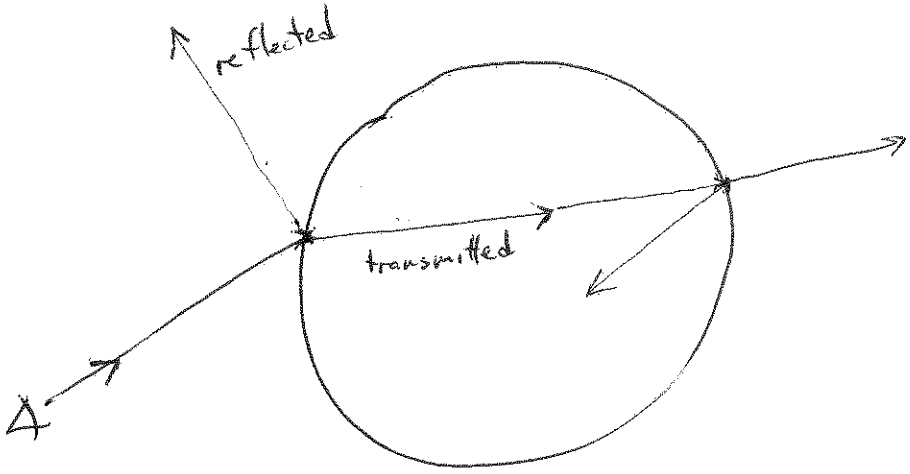
Transparent Shader



color of object = C_o

reflection = C_r

transmitted = C_t

$$color = C_o + \beta(C_r - C_o) + \gamma(C_t - C_o) \qquad \beta + \gamma = 1$$

β: reflectance

γ: transmissive

$\beta \geq 0$

$\gamma \geq 0$

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transmitted ray direction

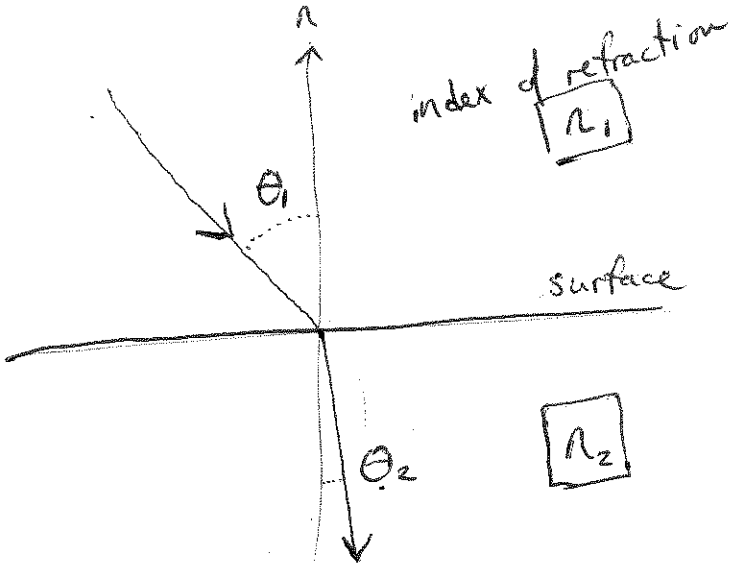
vacuum : $n = 1$

air : $n \approx 1$

water : $n \approx 1.33$

glass : $n \approx 1.46$

diamond : $n \approx 2.42$



Snell's law

$$\frac{\sin\theta_1}{\sin\theta_2} = \frac{n_1}{n_2}$$

$$\sin\theta_2 = \frac{n_2}{n_1}\sin\theta_1 \leq 1$$

what if > 1 ?

complete internal reflection

all reflected, no transmitted

Are β and γ independent?

fresnel equations relate β and γ.

$\beta+\gamma$ is chosen