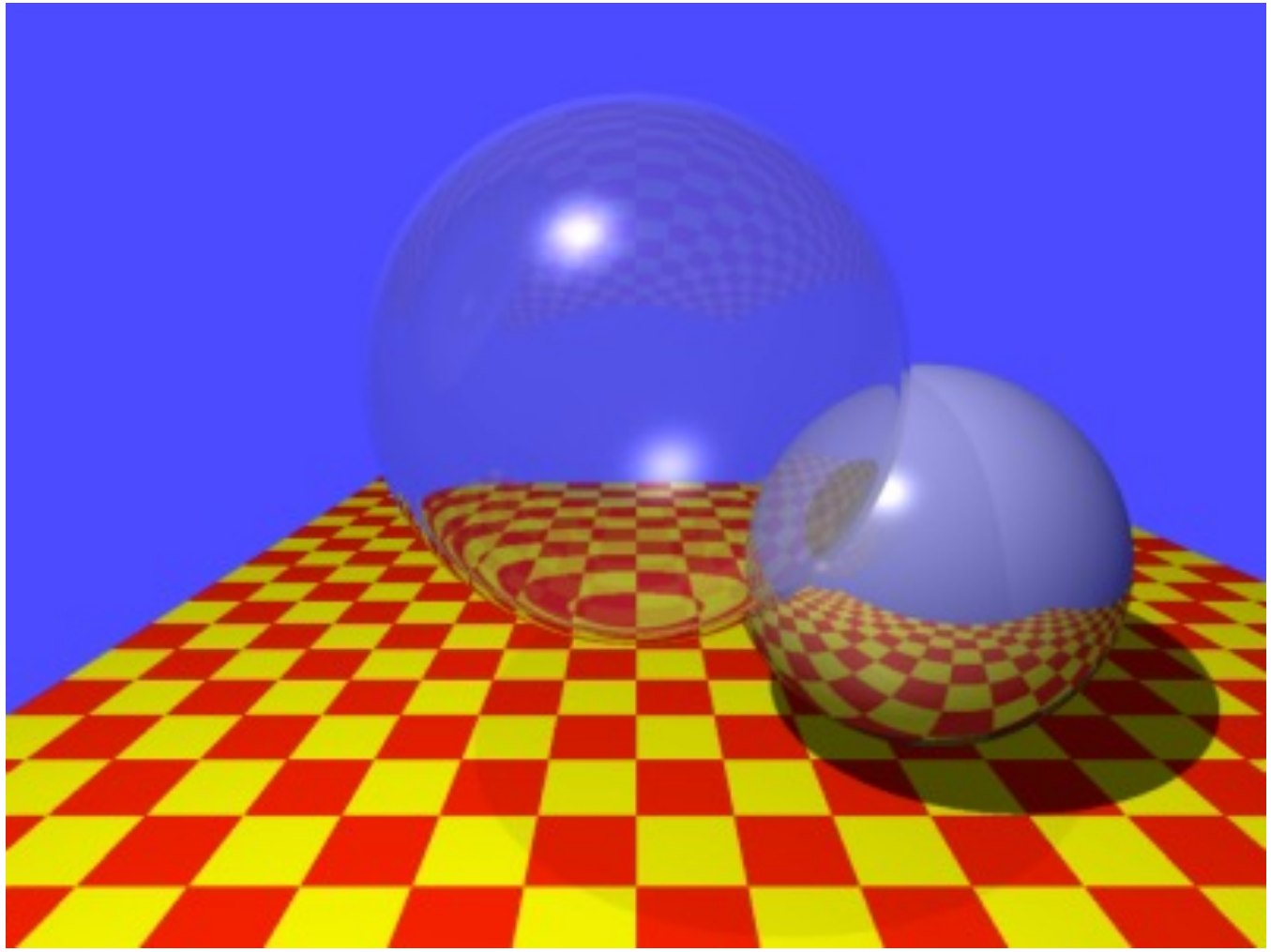
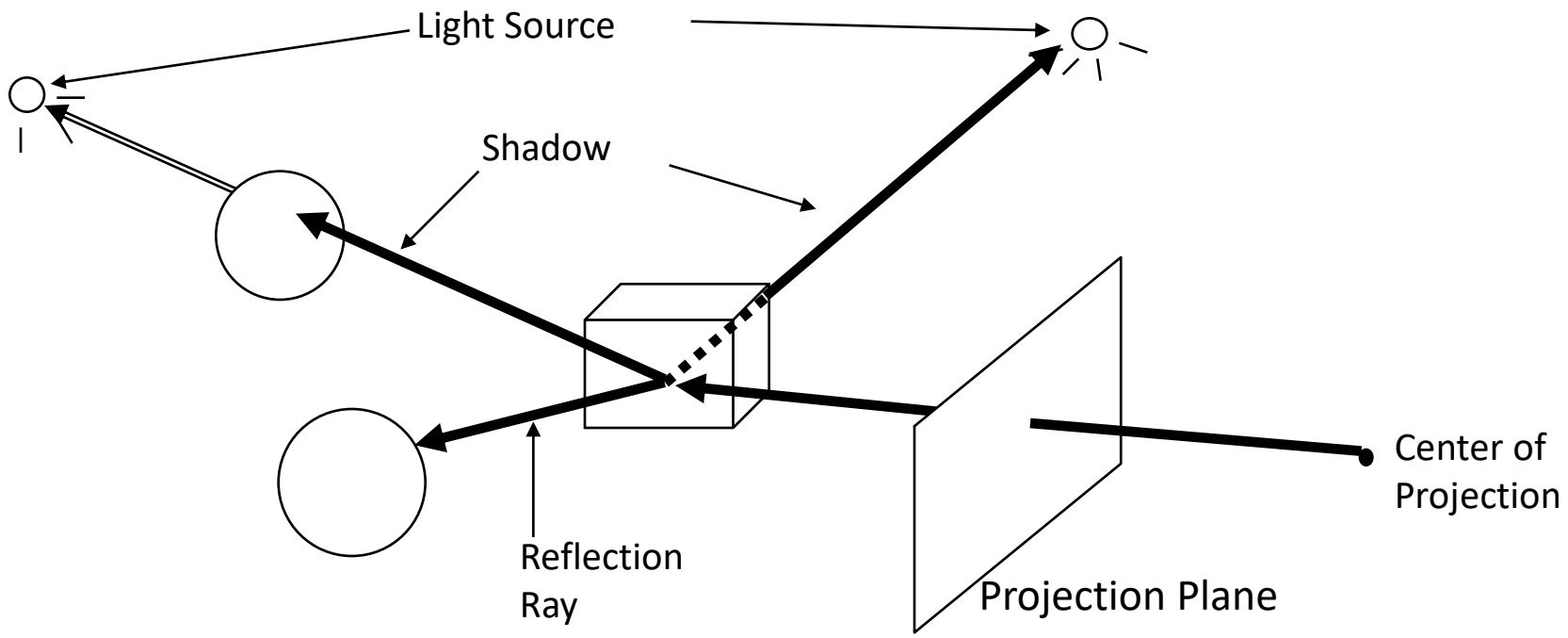
14 – raytracing (2)

Computing Plane Intersection: Implicit Line and Plane Equations

What about these other rays?



Basic Idea



Illumination of a point

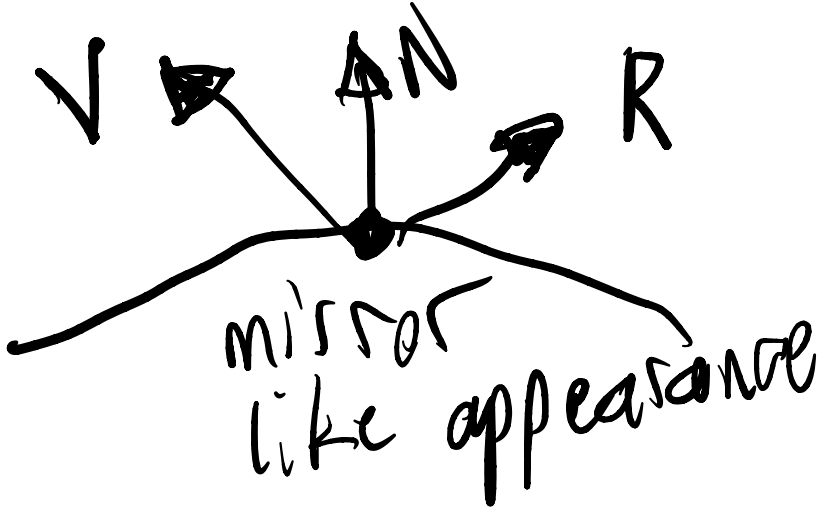
ambient

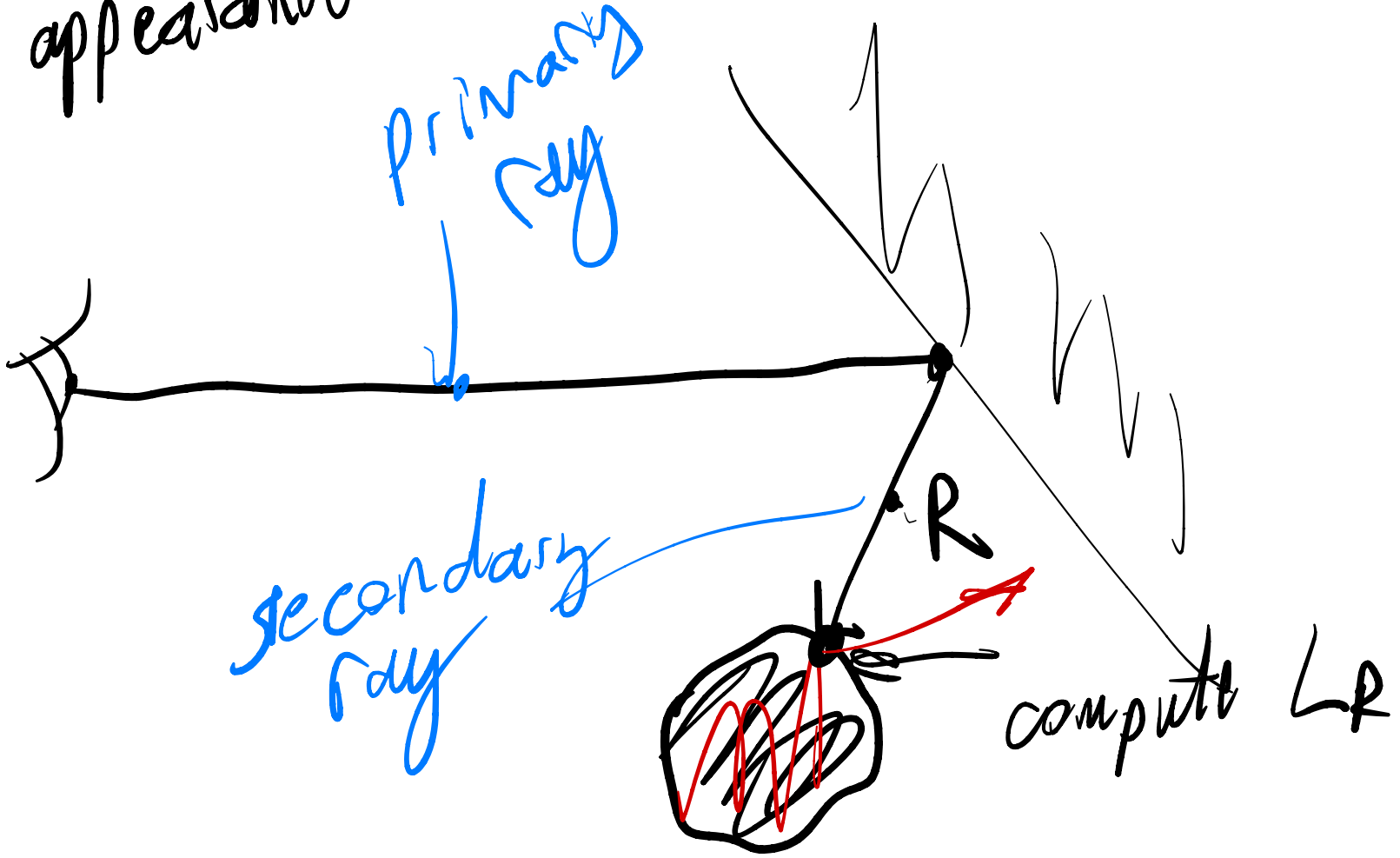
previous eq

$$L = k_a I_a + k_s L_r + k_t L_t + \sum_{1 \le i \le N} S_i I_i \left[k_d (N \cdot L_i) + k_s (R_i \cdot V)^{p_i} \right]$$

reflected refracted

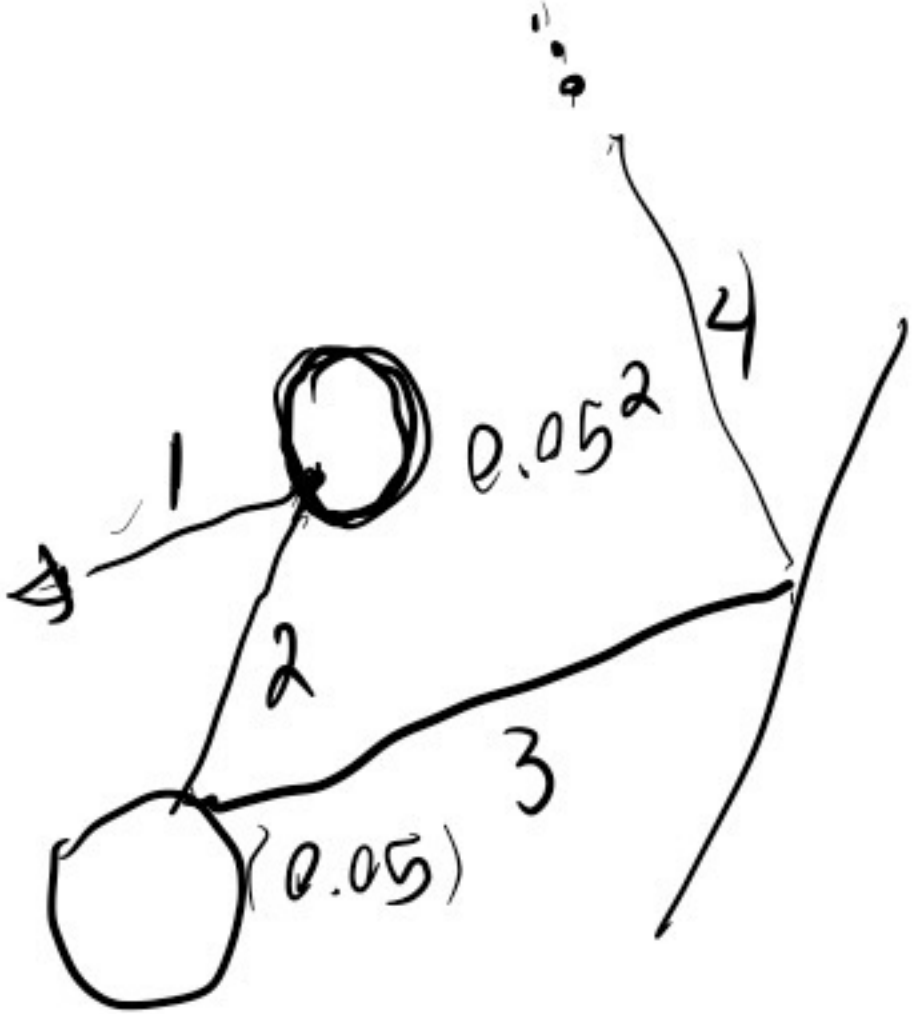
$$S_i = \begin{cases} 0 & \text{– if shadow ray (light ray) is blocked} \\ 1 & \text{– if not blocked (reached light)} \end{cases}$$





ambient + diffuse + specular + $k_r L_r$ + $k_t L_t$

how reflective? how trans

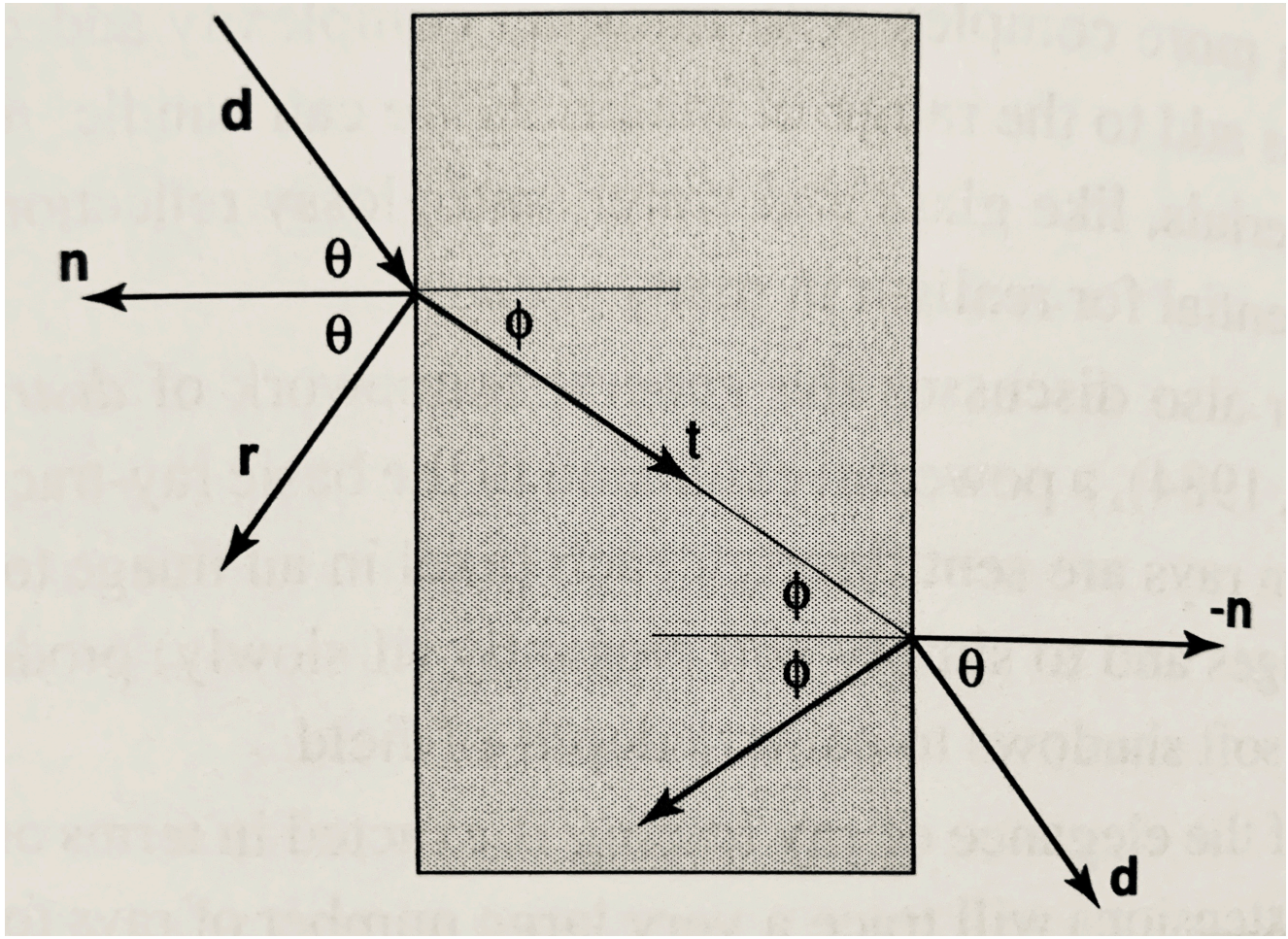


shootRay(R) → L

When to stop?

1) set max recursive step
2) contribution of ray is small

Diffraction and Reflection



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