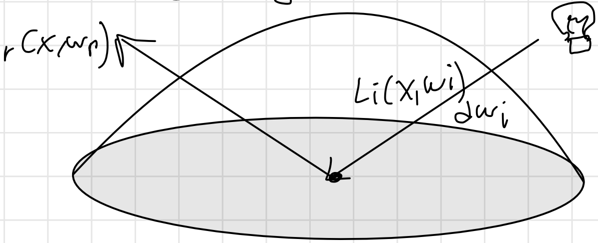
2 I will explain the formula by terms:

1) $\underline{L_e(\lambda, x, w_o)}$: this part corresponds to the radiance that is being emitted. It depends on x (the point), λ (the light wavelength) and v (the outgoing direction.

Hence, it represents all of the possible rays and directions.

$\underline{f(\lambda, x, w_i, w_o)}$ is the bidirectional reflectance distribution function, which is difference for each material depending on how they reflect light.

$\underline{L_i(\lambda, x, e)}$ is the incoming radiance, which is the light beam coming from the source.



It depends on w_i (vector relating the point and the light source, and x.

$\underline{dw_i}$ is the angle in the direction of the light

However, the integral is computationally expensive and is usually approximated by a MonteCarlo taking some sampling of the directions possible. we compute it as a sum.
we are aiming at retrieving the whole reflection area (the integral) to compute the reflection.