2.2.3

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Lightness constancy: The ability of humans to distinguish the surface color of and object and thereby its *lightness* in spite of its *brightness.*
It seems to involve two processes -

1. Comparing the brightness of different image patches and distinguishes between dark and bright patches.
2. A standard is set for which all the patches are compared to.

Lightness algorithms:
Developed from a context of simple scenes, which assumed that (OR) -

- The scene is flat and frontal.
- Surfaces are diffuse.
- Specularities have been removed.
- Camera responds linearly.

The camera response C at a point x is the product of an illumination term, an albedo term, a constant from the camera gain.

$$C(\boldsymbol{x}) = k_c I(\boldsymbol{x})\rho(\boldsymbol{x}).$$

Two other important assumptions are also made.

- Albedos change quickly over space.
- Illumination changes slowly over space.