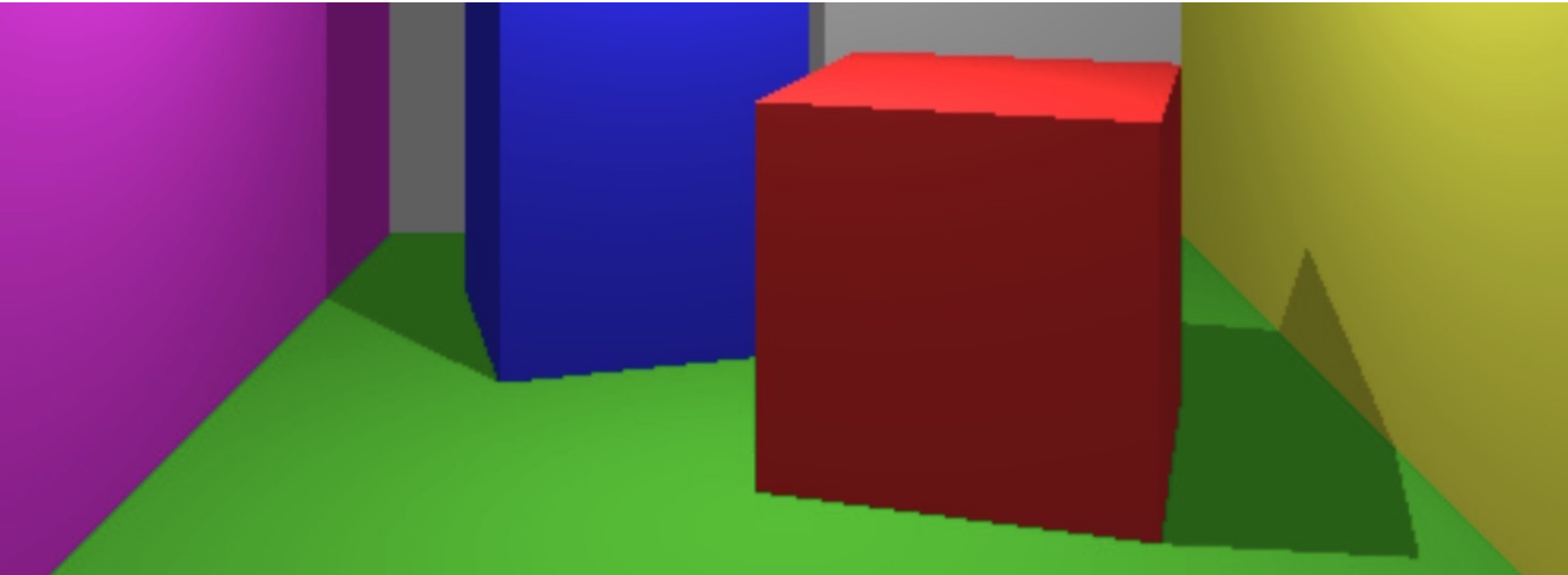# Shadows

With light comes shadow !

But how on earth do we compute this ?

Can the surface see the light ?

We've already used raytracing to determine
the visibility of triangles from the camera

We can use the same technique to check if
a surface can "see" the light

We fire a "shadow ray" from surface towards light
If it hits a triangle before reaching the light
the surface must be in shadow…

in shadow

Shadow "Acne"

A problem you might encounter in the practicals !
Occurs when a triangle "sees" a bit of itself
and thinks there is something obscuring the light

SeeingYourselfGIF

Solving Acne Problems

You could check that triangle causing the shadow isn't the same as the triangle being overshadowed !

But you may still get the "diagonal" problem:

Easiest solution:
    Just ignore any intersection
    that is very close to surface

This feels very hacky !
But it is "the done thing"