

Chapter 11 Review

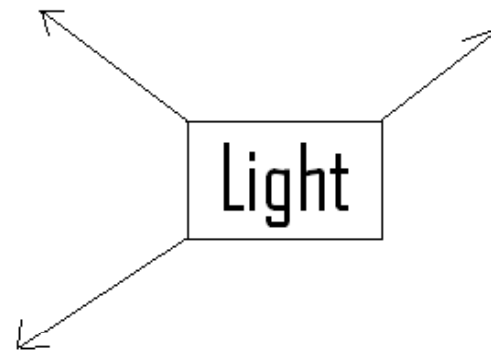
SNC 2D1

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11.1 What is Light?

The Electromagnetic Spectrum, Figure 5 pg. 465



How does light travel?

- transferred through radiation
- no medium is required

-in a vacuum like space, there is no matter, so no heat energy can be transferred

-in a vacuum, each colour of visible spectrum travels at same speed. In a medium like glass or air, some colours travel at slower speeds

Properties

1. It travels very fast.

How do we know this? It can be measured

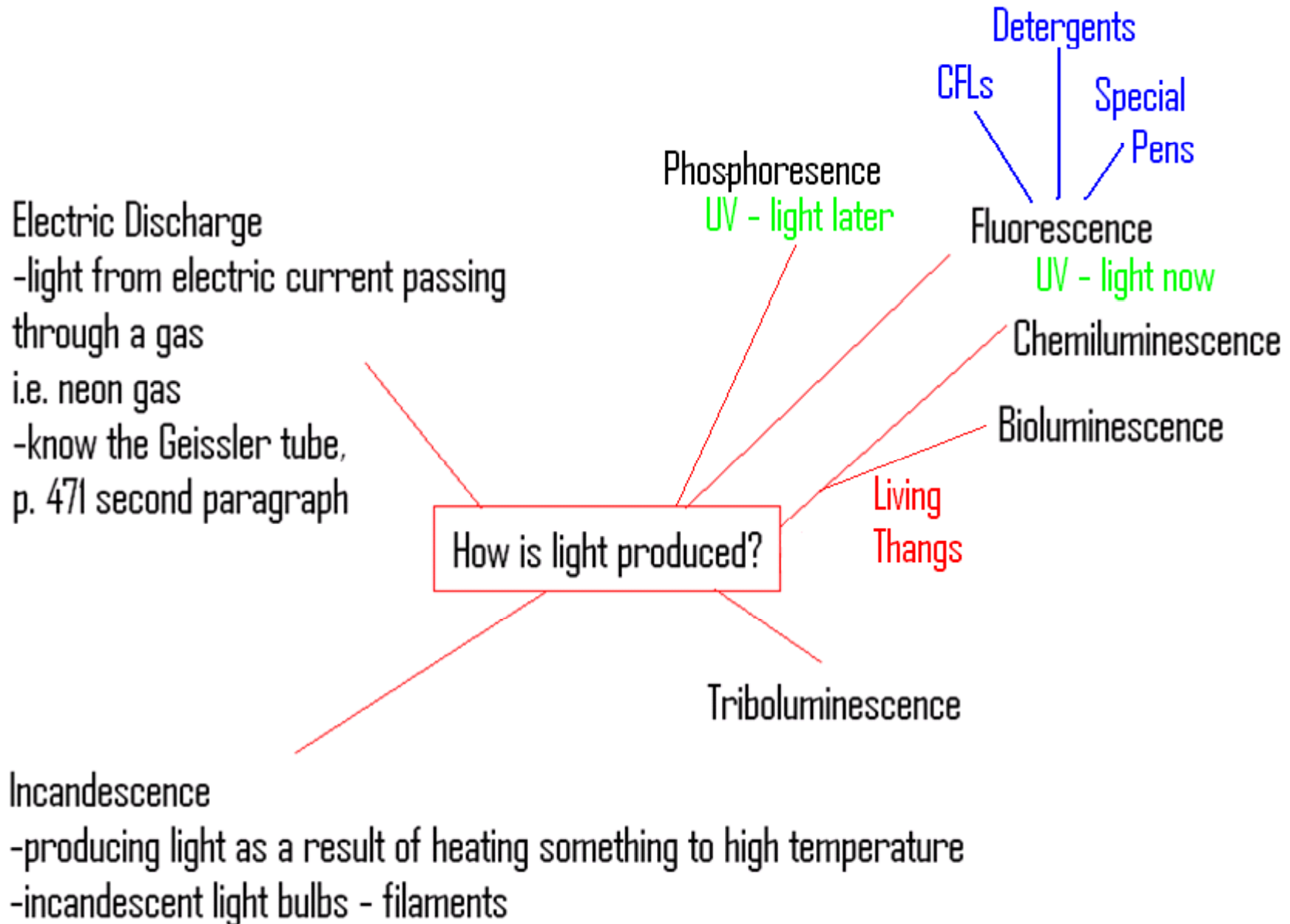
2. Light travels in a straight lines

How do we know this?

When you turn a flashlight on in a dark room with dust, you can see a beam

Sharp shadows around objects

11.2 How is light produced?



11.3 Lasers



Lasers

versus

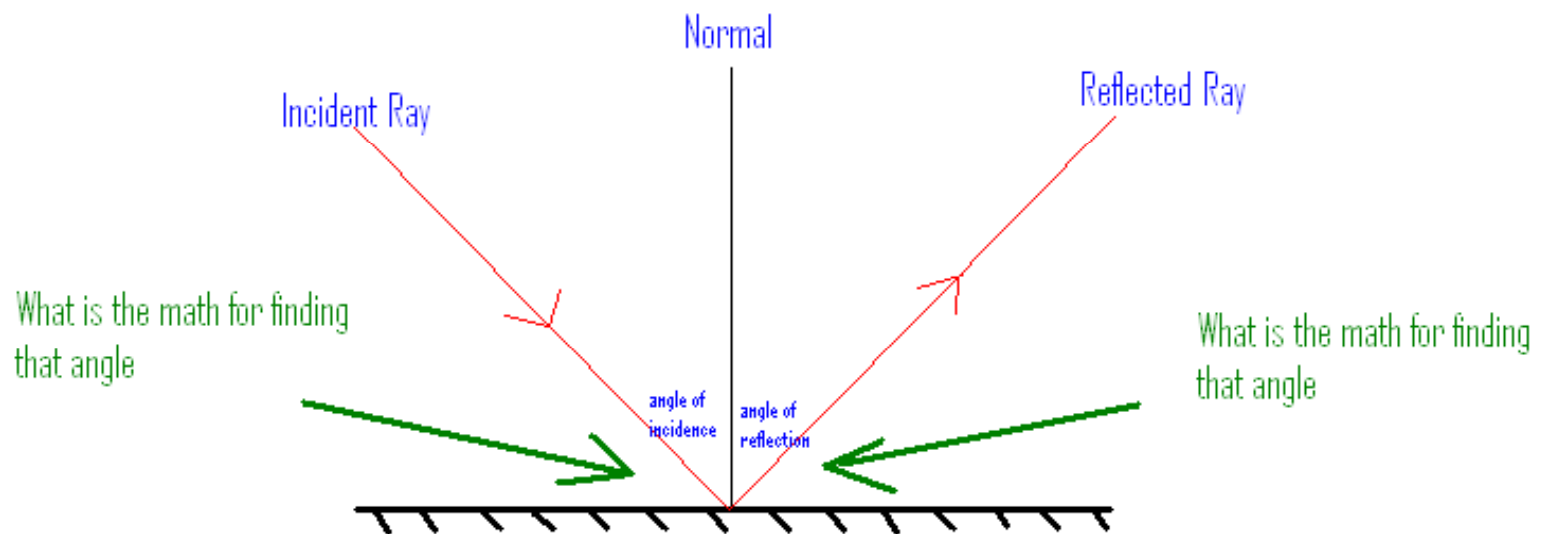
Incandescent Light

- produces em waves of same energy level
- therefore produces light of pure colour
- very intense: the waves travel in unison in the same direction

- emit em waves of many different energy levels
- this includes infrared. hot hot hot

11.4 The Ray Model of Light

- This section forms a basis for the rest of the chapter, includes: the incident ray, reflected ray, angle of incidence, angle of reflection, normal, plus how to draw ray diagrams, include the symbols for the rays and the mirror



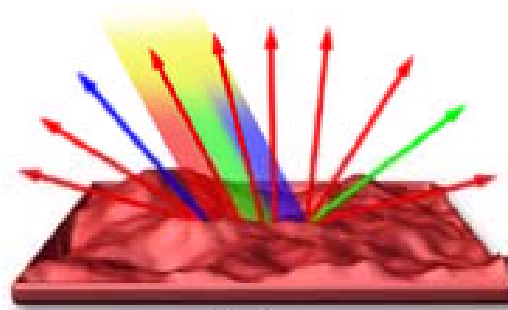
11.6 The Laws of Reflection

- Know the two laws (we wrote them on the review quiz on Wednesday)
- The two types of reflection, and recognize examples of each

Specular and Diffuse Reflection

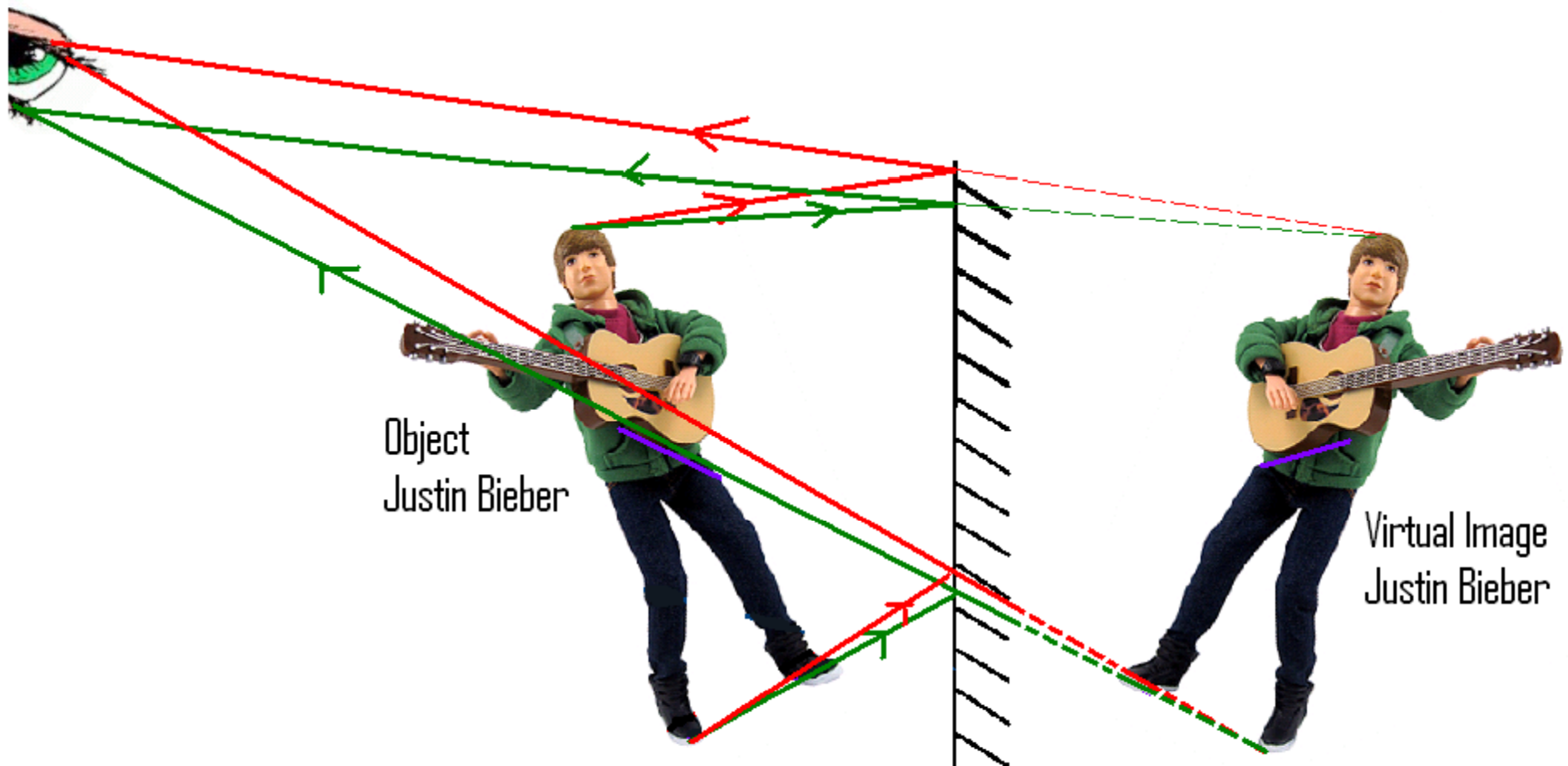


**Specular
Reflection**



**Diffuse
Reflection**

11.7 Images in Plane Mirrors



11.7 continued Images in Plane Mirrors

Virtual

-the reflected rays from a point on the object always diverge but will appear to converge behind the mirror
 -the reflected rays bouncing off the mirror never converge again to form a real image in front of the mirror

versus

-it appears behind the mirror but no light actually comes from the apparent location

Real

-it is real - if you held up a screen the image would appear on the screen

-any image that can be formed on a screen is a real image because the light rays are actually arriving at the image location

-the reflected rays converge in front of the mirror to form the real image

SALT

Size

S



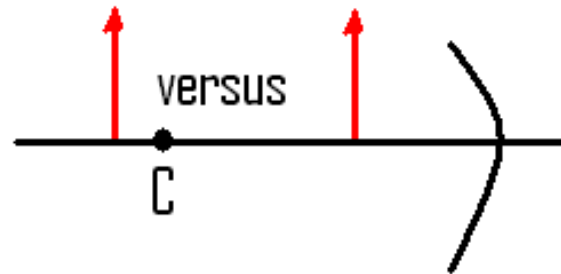
Attitude

A



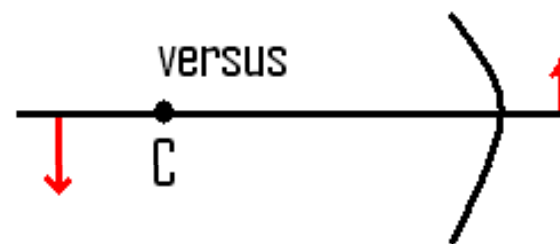
Location

L



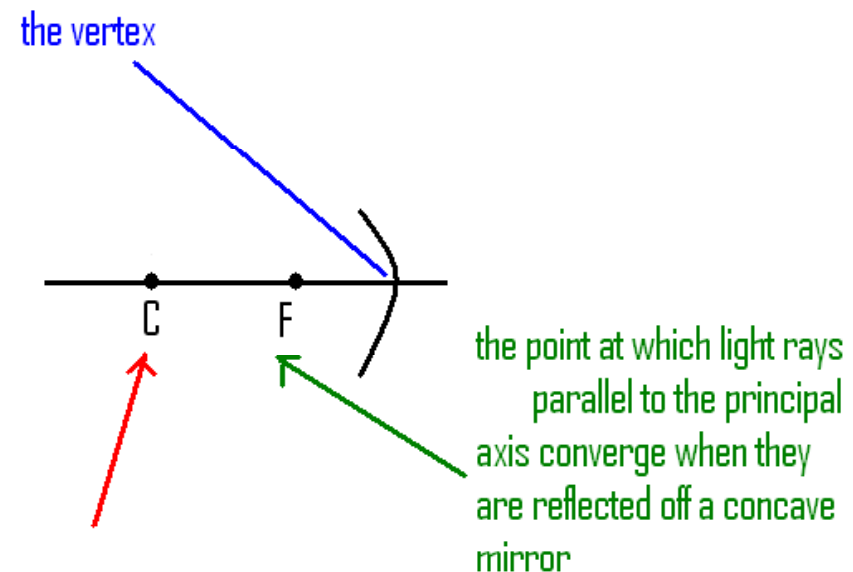
Type

T



11.9 Curved Mirrors

- Know all the terminology, where incident rays hitting the mirrors reflect to, and how to locate images

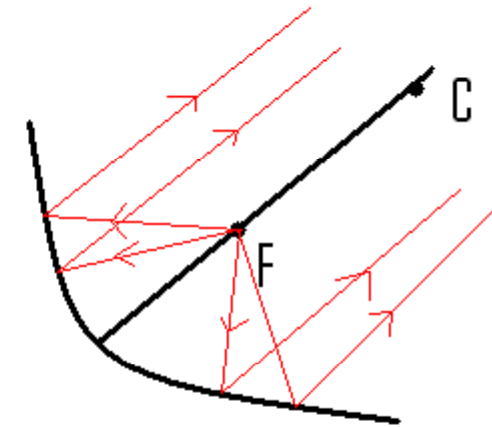


Convex and Concave mirrors make up a portion of a sphere. The centre of that sphere is located at C.

Car headlights - filament is inside the focus so the light rays spread apart and illuminate a greater area

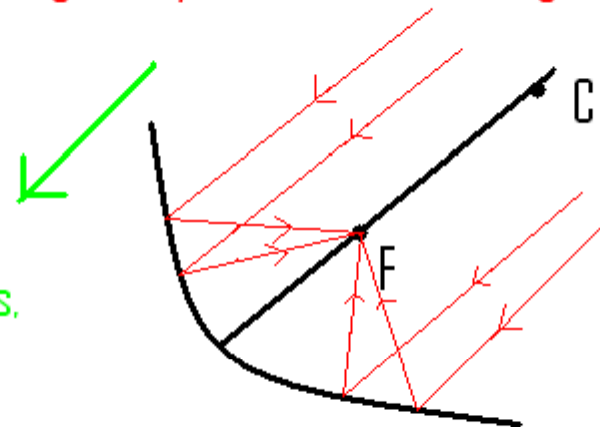
Searchlights and flashlights - the light source (filament) is at the focus, and the reflected rays form a parallel beam

Concave Mirrors and their uses



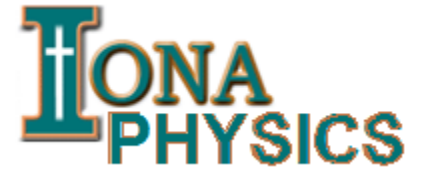
When an object is beyond C, at C, or between C & F, the reflected rays meet in front of the mirror forming an inverted real image. Many devices take advantage of this property.

Satellite dish - receives parallel rays and reflects them to the focus, -intensifies the signal



Magnifying glass - the virtual image in a concave mirror is larger than the original object and upright

Practice Problems



Page 508-509 Self Quiz 1-24