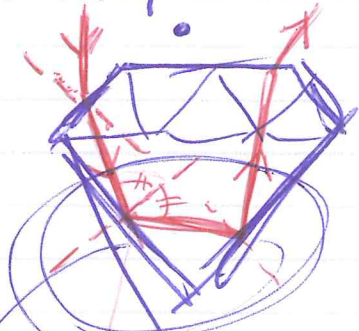


12.5 - Using T.I.R.

a) Why Diamonds sparkle?

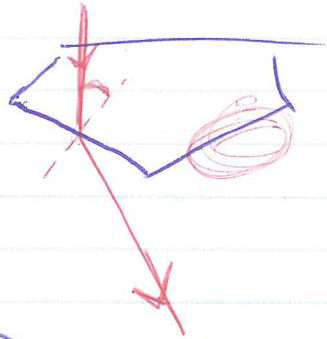
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↳ Light gets sent back up to viewer

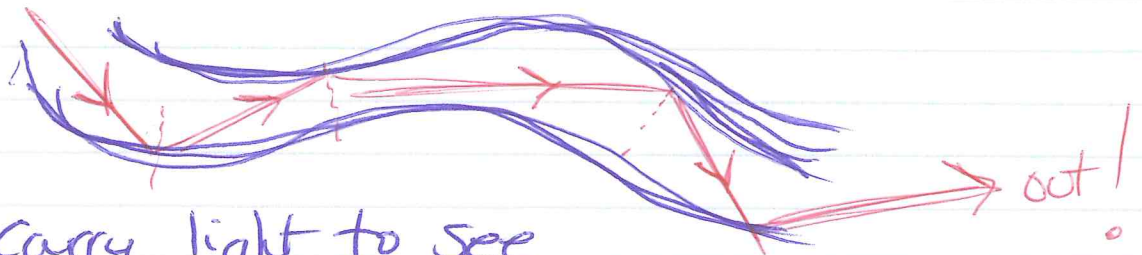
diamond $n = 2.42$ ∴ smallest θ_c (24.4°)

↳ bottom is key



b) Fibre Optics

- thin glass fibres ("wires")
carry light in a curved path



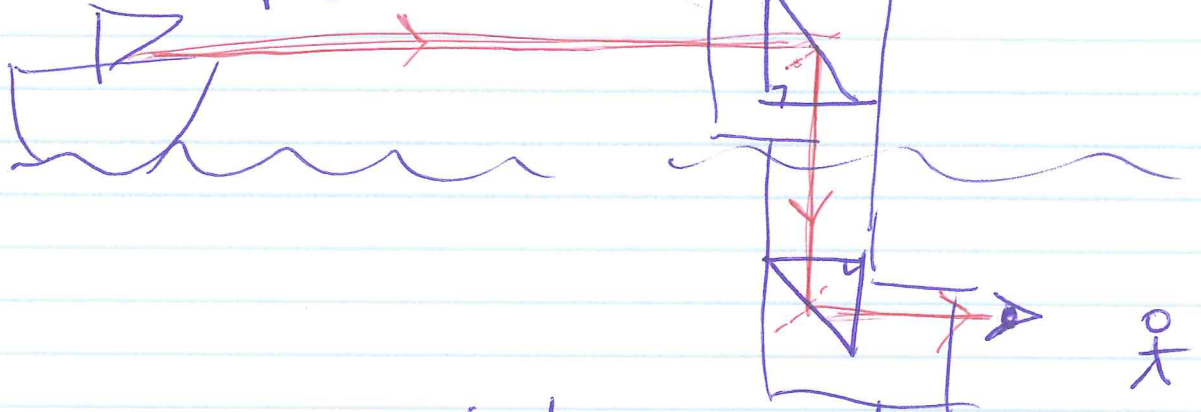
* carry light to see
to a difficult spot.

ie: endoscope → down throat.

* image (light)
is carried back out. (camera)

Colonoscopy \Rightarrow from the "end"
of digestive tract.

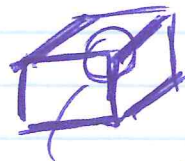
c) Periscope



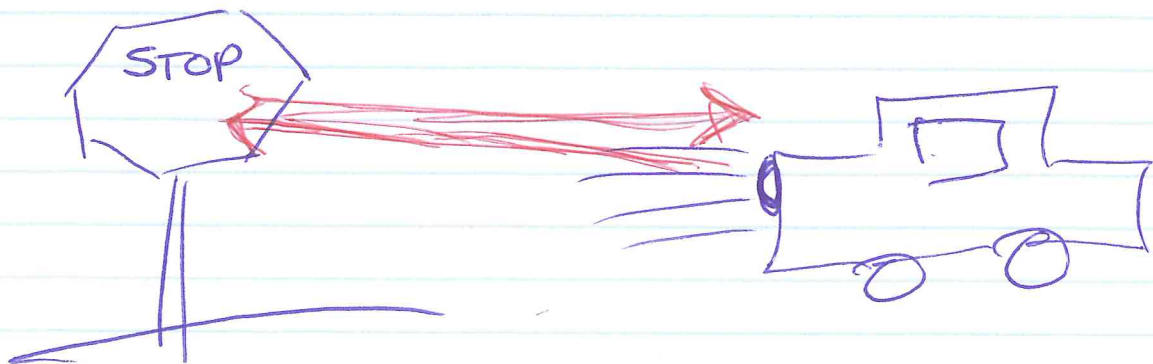
- * Mirrors reflect light but lose some light.
- * Prisms reflect light (T.I.R.)
+ lose much less light.

d) Retro-Reflectors

\hookrightarrow send light back
to where it came.



cut off corner

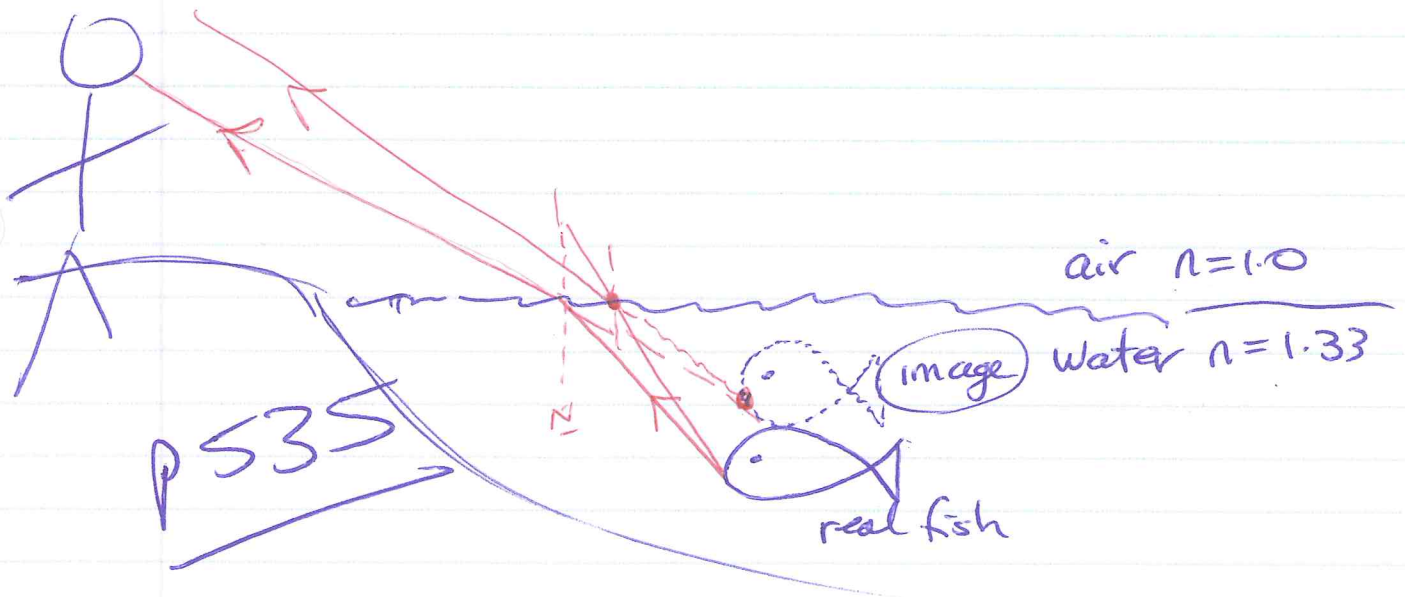


12.7 Refraction Phenomenon

Hlw Lesson
#12

a) Apparent Depth

↳ objects in water appear to be closer than they really are.



b) Rainbows

Refraction (1)(3)

T.I.R. (2)

Dispersion (1)(3)

white light \rightarrow ROYGBIV

bends least bends most

Water drop Magnified

