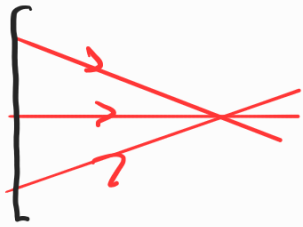


3.5 Reflection of Light (反射)

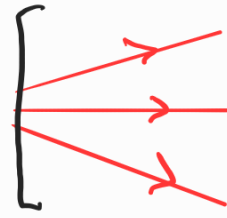
Light and Vision (光與影) → optics (光學)

LIGHT

beams of rays (光線)
parallel (平行)



Convergent (會聚)



Divergent (發散)

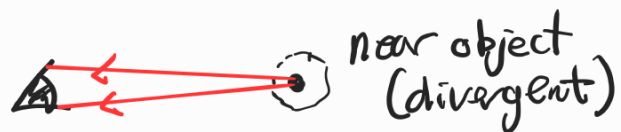
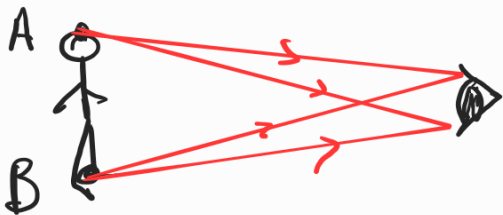
* No light : we cannot see

* Lamp is luminous object (發光體)

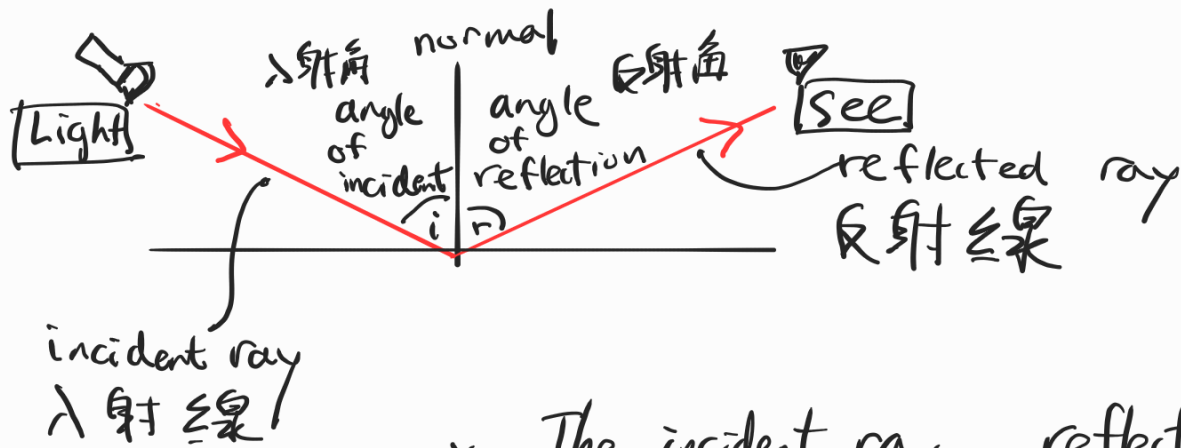
* Book is non-luminous object (不發光體)

* We see non-luminous object by reflected ray (反射線)

use ray diagram to identify light



REFLECTION



* The incident ray, reflected ray and normal, lie on the same plane

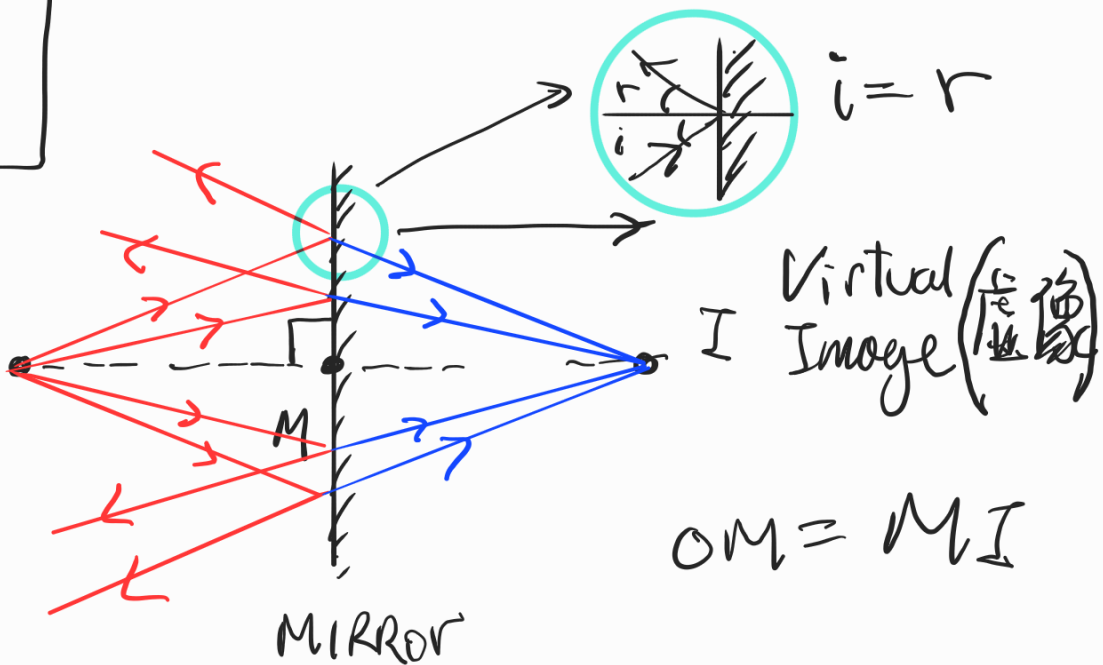
* angle of reflection (r) = angle of incident (i)
law of reflection
反射定律

Mirror Image



Laterally inverted (橫向倒置)

Real Object (實物)



- * The image is laterally inverted
- * The image is virtual
- * Image distance = object distance
- * Image size = object size

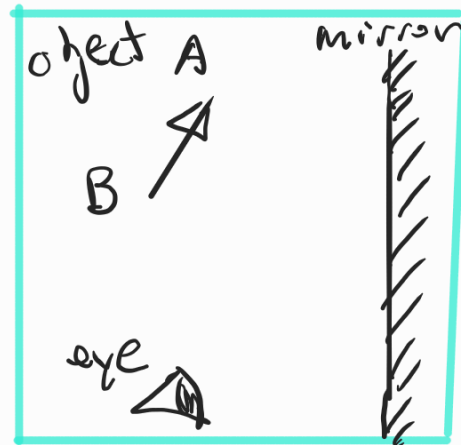
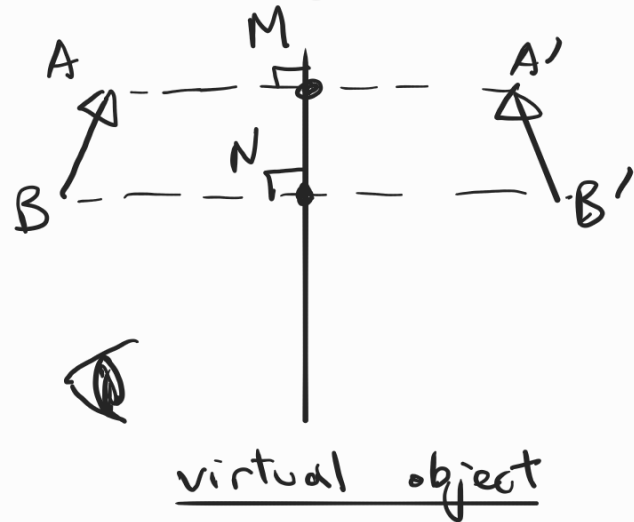
RAY TRACING

(mirror)

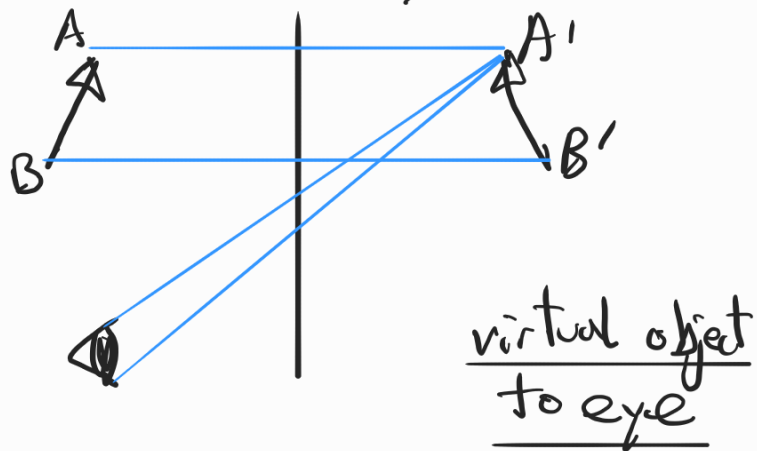
STEP 1

$$AM = A'M$$

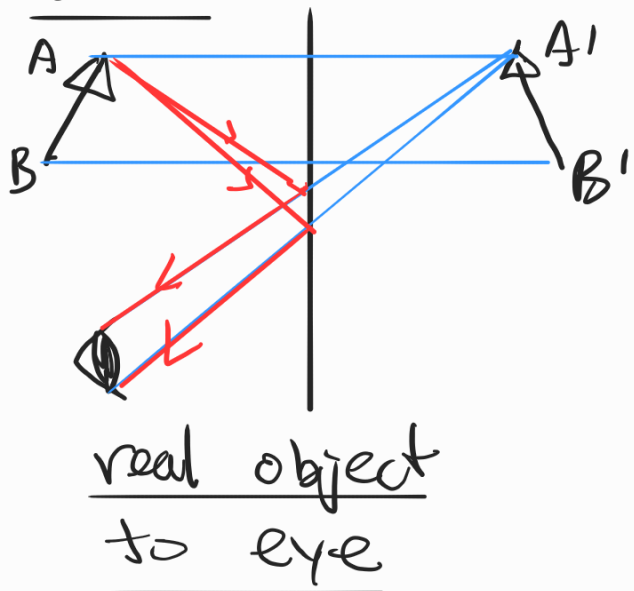
$$BN = B'N$$



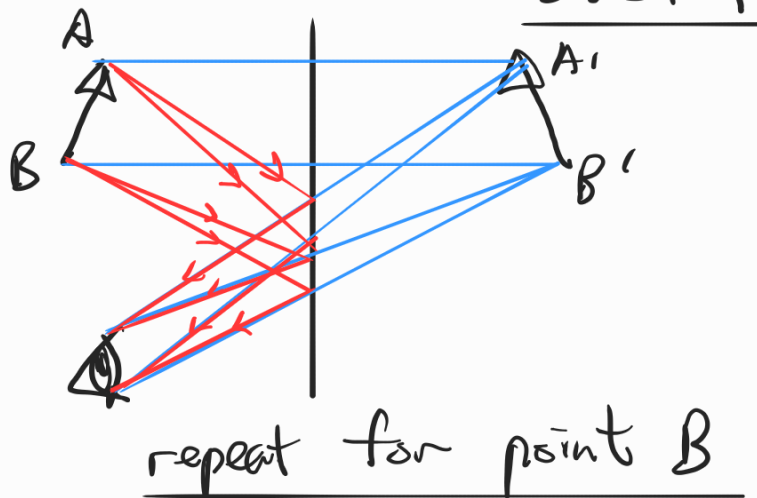
STEP 2

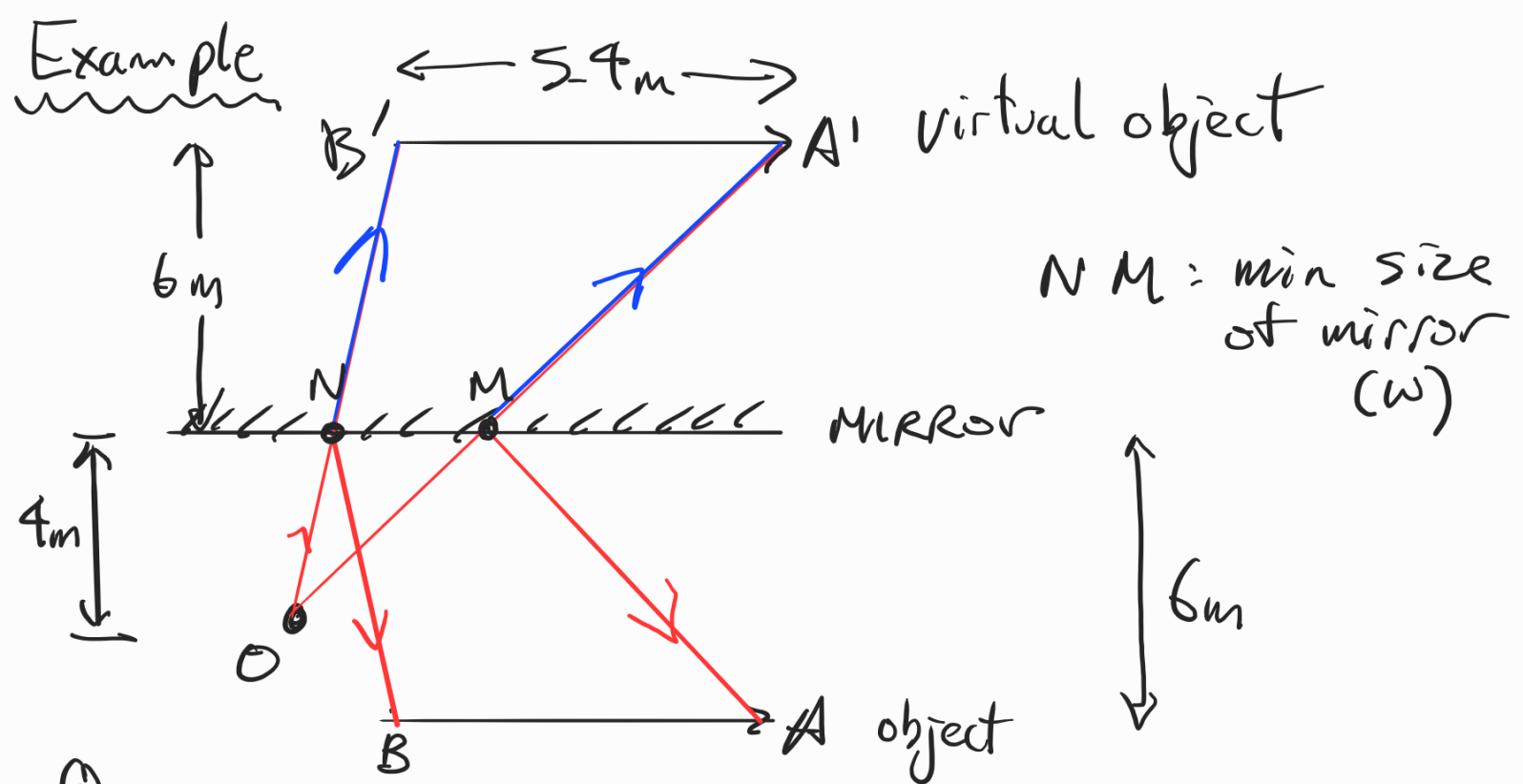


STEP 3



STEP 4





Q

Find the min size of mirror

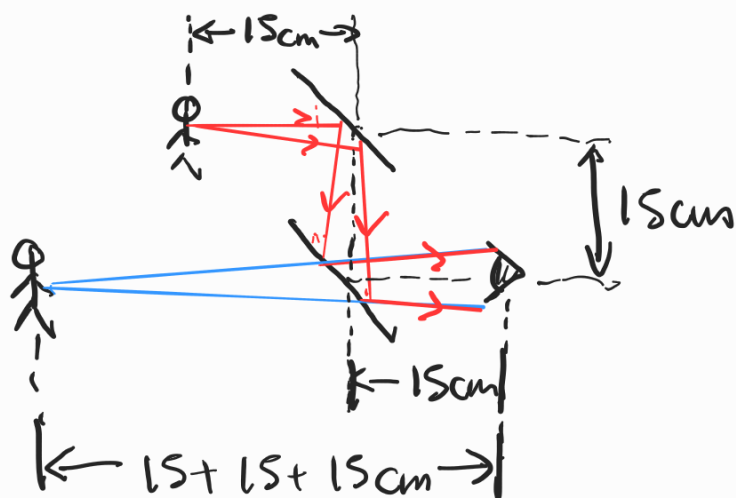
SOL N

$\triangle OMN$ and $\triangle OA'B'$
are similar triangles

$$\frac{4}{4+6} = \frac{w}{5.4}$$

$$w = 2.16 \text{ m}$$

multiple reflection
periscope (潜望镜)



Regular + Diffused Reflaction
(单向反射) (漫反射)

