

Optics #1

p 844 MC 2,3

p 845 Concept 17, 18

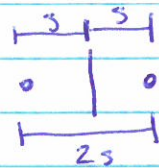
→ p 803 Problem 14

→ p 845 Problems 2, 5 (7)

p 844 - Multiple Choice

2) Where does image of object 3 meters from plane mirror appear?

- 2s meters from object



3) Plane mirror produces what kind of image?

- Virtual + same size

- Concept

17) Explain why image has left-right reversal but not head-feet

- A mirror reverses front and back. To produce a real object equal to the virtual image in the mirror you would have to walk behind the mirror + turn around 180°

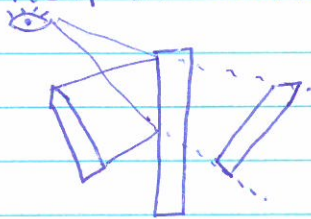
• Thus the left hand in the virtual image equates to the right hand in real object, so left + right appear reversed when looking at the virtual image. However up + down are not affected

18) You run to building w/ reflective walls w/
 $v = 1.5 \text{ m/s}$. How fast Image move toward you?

(i) $V = 2v = 2(1.5 \text{ m/s}) = 3.0 \text{ m/s}$

p845 - Problems

2) Pencil in front of plane mirror?



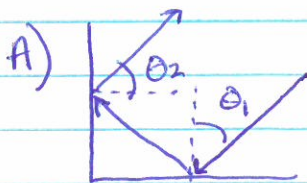
- Same size
- Left Right reversal
- Same distance

5) Smallest size plane mirror 190 cm tall person should buy to see himself?

(i) $H = \frac{L}{2} = \frac{190 \text{ cm}}{2} = 95 \text{ cm}$

p803 - Problems

14) Two mirrors at right angles



$\theta_1 = 65^\circ$

B) $\theta_2 = 90^\circ - 65^\circ = 25^\circ$