Physicsaholics

Q 1. A person AB of height 170 cm is standing in front of a plane mirror. His eyes are at height 164 cm. At what height from P should a hole be made in the mirror so that he cannot see the top of his head.
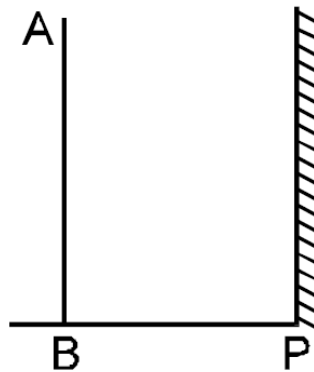
(a) 167 cm   (b) 161 cm
(c) 163 cm   (d) none of these

Q 2. Two plane mirrors are inclined to each other at 90°. A ray of light is incident on one mirror and the reflected light goes to the other mirror. The ray will undergo a total deviation of :
(a) 180°
(b) 90°
(c) 45°
(d) cannot be found because angle of incidence is not given.

Q 3. Find the number of images formed by two mutually perpendicular mirrors –
(a) 3   (b) 4   (c) 1   (d) 2

Q 4. The θ is the angle between two plane mirrors, in which of the following options always 5 images will be formed?
(a) 30°≤ θ ≤72°   (b) 45°≤ θ ≤72°
(c) 60°≤ θ ≤72°   (d) 15°≤ θ ≤72°

Q 5. Two mirrors are inclined at an angle of 60°. Then what is the number of images formed for an object placed in between the mirrors ?
(a) 3   (b) 5   (c) 1   (d) 7

Q 6. Two plane mirrors are inclined at an angle θ. A ray of light incident on one mirror at an angle of incidence i. The ray is reflected from this mirror, falls on the second mirror from where it is reflected parallel to the first mirror. What is the value of i, the angle of incidence in terms θ ?

(a) $2\theta - 90^\circ$　　　　　　　　　　(b) $4\theta - 90^\circ$

(c) $\theta - 90^\circ$　　　　　　　　　　(d) $3\theta - 90^\circ$

Q 7. Two plane mirrors are inclined to each other at some angle. A ray of light incident at 30° (from normal) on one, after reflection from the other it retraces its path. The angle between the mirrors is

(a) 30°　　　(b) 45°　　　(c) 60°　　　(d) 90°

Q 8. A boy of length 10 m, to see his own complete image, requires a mirror of length (in meter) at least equal to:

(a) 10/4　　　　　　(b) 10/3　　　　　　(c) 10/2　　　　　　(d) 4

Q 9. Two plane mirrors M_1 and M_2 each have length 1 m are separated by 1 cm. A ray of light is incident on one end of mirror M_1 at angle 45°. How many reflections the ray will have before going out from the other end?

(a) 50　　　　　　　(b) 51

(c) 100　　　　　　(d) 101

Q 10. Find number of images formed according to given case

(i)　　　　　　　　(ii)

(a) 8, 9　　　(b) 9, 8

(c) 9, 9　　　(d) 8, 8

Answer Key

Q.1 a	Q.2 a	Q.3 a	Q.4 c	Q.5 b
Q.6 a	Q.7 a	Q.8 c	Q.9 d	Q.10 a