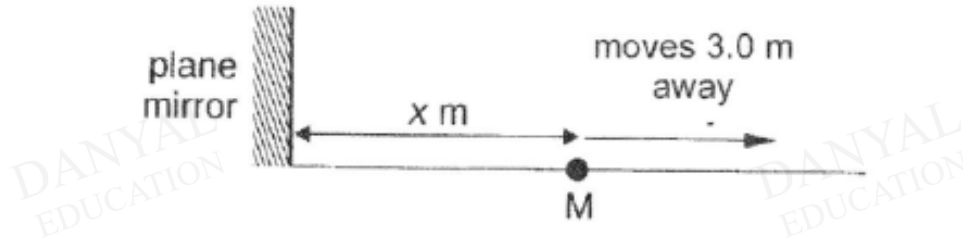


O Level Pure Physics MCQs

Light Test 1.0

Q1

The diagram shows a man standing at a position M in front of a plane mirror, a distance of x m from the mirror.

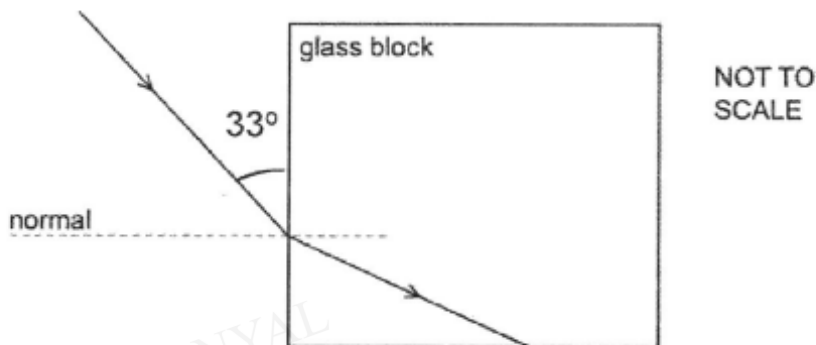


When the man moves 3.0 m away from the mirror, the new distance between the man and his image becomes 12 m. What is the value of x ?

- A 1.0 m
- B 2.0 m
- C 3.0 m
- D 4.0 m

Q2

Light passes from air into a glass block of refractive index 1.5, as shown.

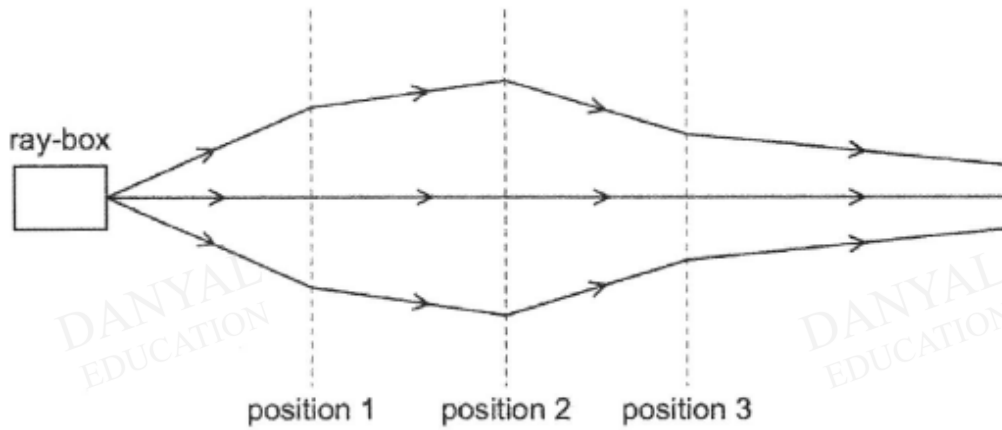


What is the angle of refraction in the glass and what is the critical angle?

	angle refraction	critical angle
A	34°	42°
B	34°	60°
C	38°	42°
D	38°	60°

Q3

The rays of light from a ray-box pass through three lenses placed at positions 1, 2 and 3.



What type of lens is used at each position?

	position 1	position 2	position 3
A	converging	converging	converging
B	converging	converging	diverging
C	diverging	converging	diverging
D	diverging	diverging	converging

Q4

Fig. 24.1 shows a person X standing 1.0 m in front of a plane mirror while observer O stands 2.5 m behind X.

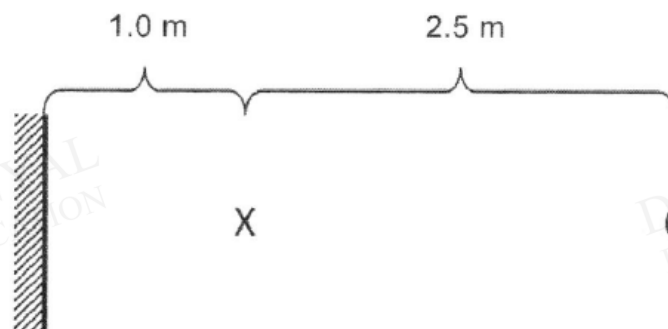


Fig. 24.1

Determine the distance between observer O and the image of X.

- A** 2.0 m **B** 3.5 m **C** 4.5 m **D** 7.0 m

Q5

Fig. 25.1 shows the path of a ray of light as it strikes the water-to-air boundary.

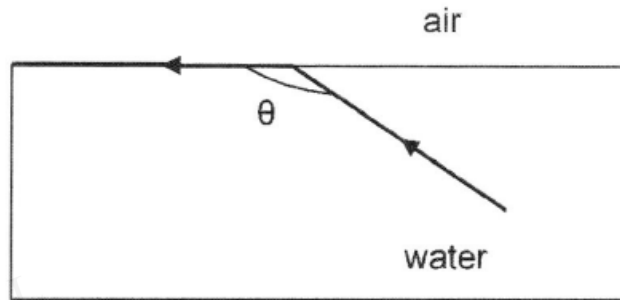


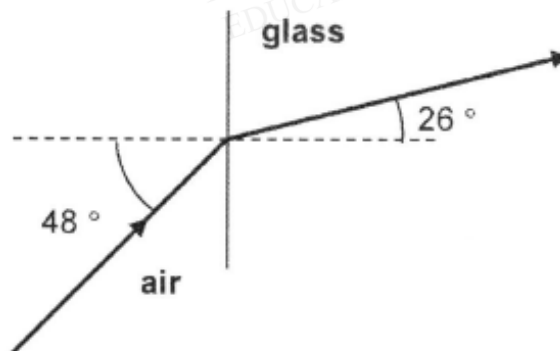
Fig. 25.1

If the speed of the light in the water is 2.3×10^8 m/s and its speed in air is 3.0×10^8 m/s, determine the angle θ .

- | | | | |
|---|-------------|---|-------------|
| A | 100° | C | 130° |
| B | 120° | D | 140° |

Q6

A ray of light travels from air into glass as shown below.

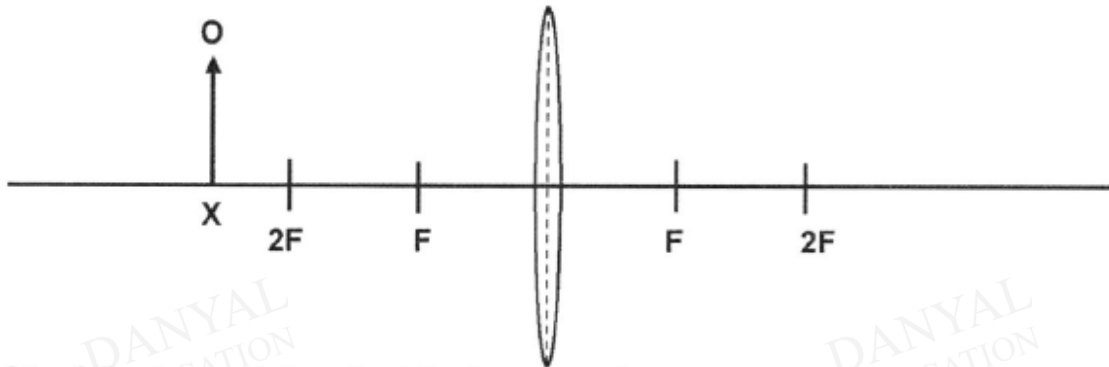


Given that the refractive index of air is 1.00, what is the refractive index of glass?

- | | | | |
|---|------|---|------|
| A | 1.21 | B | 1.34 |
| C | 1.53 | D | 1.70 |

Q7

The diagram below shows a convex lens used to produce an image of an object **O** when it is placed at **X**.

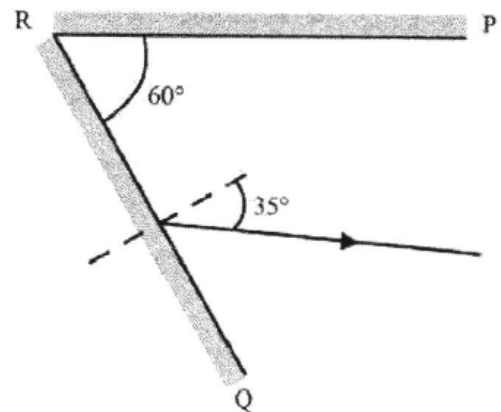


What of the following best described the image produced by object **O**?

- A real and diminished
- B real and magnified
- C virtual and diminished
- D real and same size as object

Q8

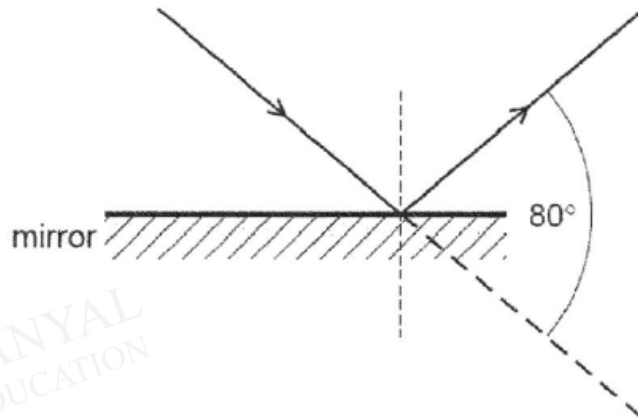
The plane mirrors **PR** and **QR** are arranged at angle of 60° to each other. A ray of light is reflected from plane mirror **QR** at an angle of reflection of 35° . It was previously reflected from plane mirror **PR**. What is the angle of incidence at mirror **PR**?



- A 25°
- B 35°
- C 45°
- D 65°

Q9

The diagram shows a ray of light reflecting off a mirror.

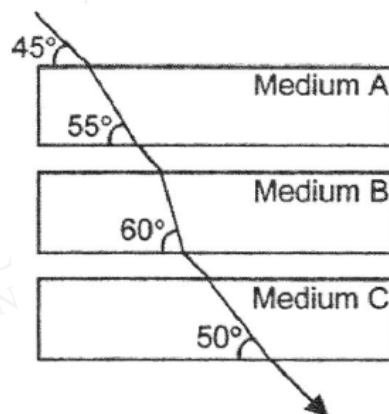


What is the angle the light ray turns through?

- A 40°
- B 50°
- C 80°
- D 130°

Q10

The diagram shows a ray of light passing through three transparent media, A, B and C.



(diagram not to scale)

Which statement is correct?

- A Medium B has a lower refractive index than medium C.
- B Medium B has the smallest refractive index.
- C Light travels slower in medium A than in medium C.
- D Light travels the fastest in medium A.

Answers

Light Test 1.0

Q1 C

Q2 A

Q3 B

Q4 C

Q5 D

Q6 D

Q7 A

Q8 A

Q9 C

Q10 C

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