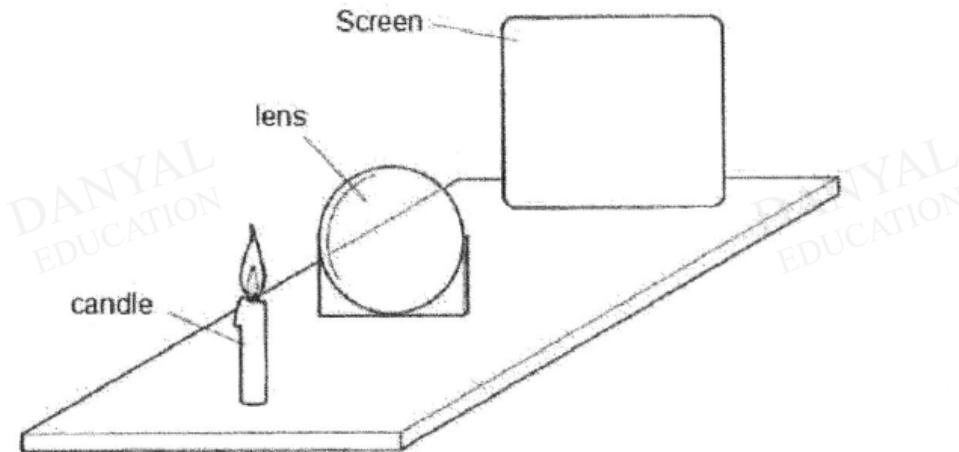## O Level Pure Physics MCQs

Light Test 2.0

Q1

The diagram shows a thin converging lens placed in between a candle and a screen.

Various focussed images of the candle are produced on the screen by moving the lens and the screen backwards and forwards.

Which statement is correct?

A   The image is bigger than the object.

B   The image is closer to the lens than the object is.

C   The image is formed at the focal point of the lens.

D   The image is inverted.

Q2

A man moves towards a plane mirror with a constant velocity of 20 cm/s. The distance between the man and his image in the mirror

A   decreases at 20 cm/s

B   decreases at 40 cm/s

C   increases at 20 cm/s

D   increases at 40 cm/s

Q3

Two blocks of glass and perspex are known to have the same refractive index. The speed of light in glass is 2/3 the speed of light in a vacuum.

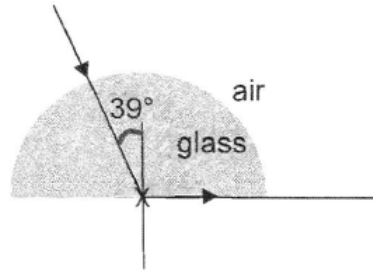Which of the following shows the correct path of light through the two blocks?
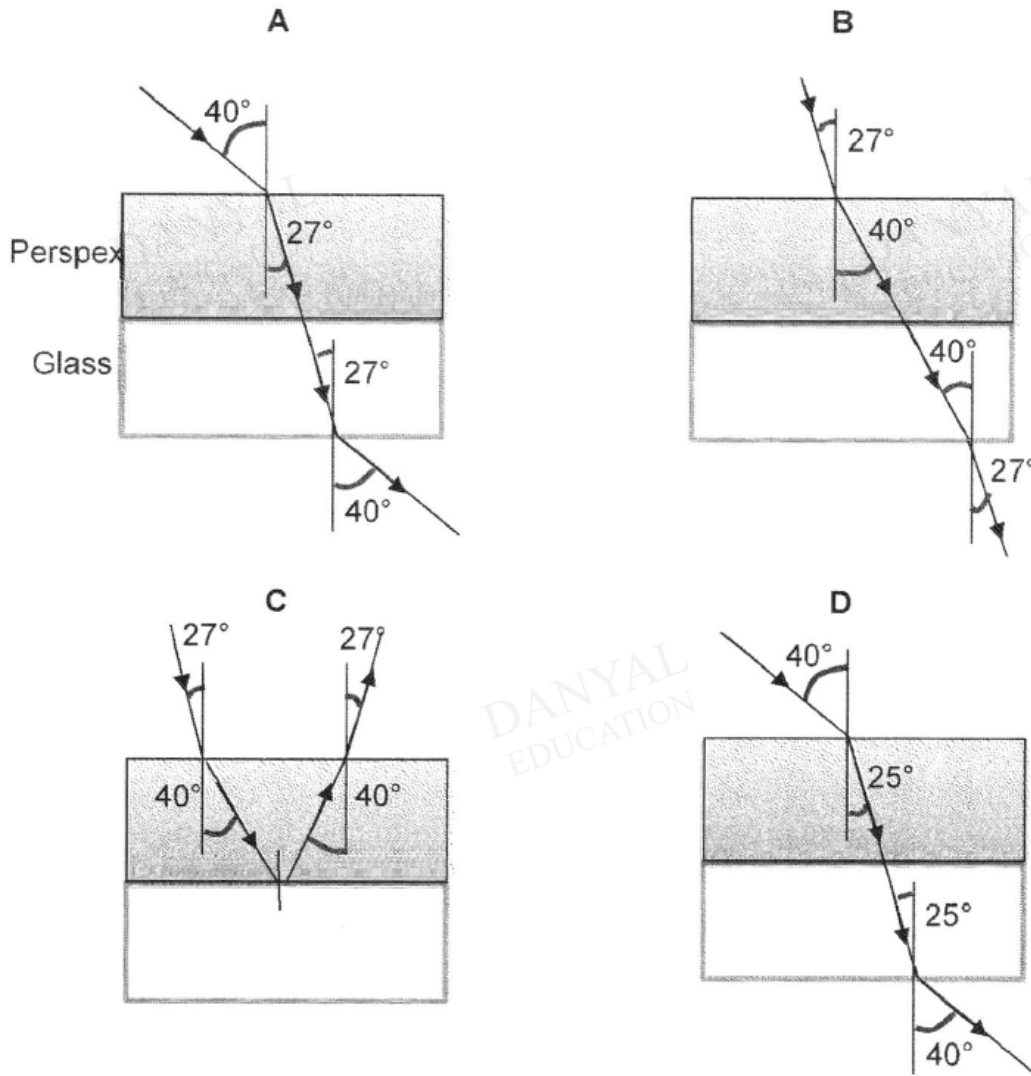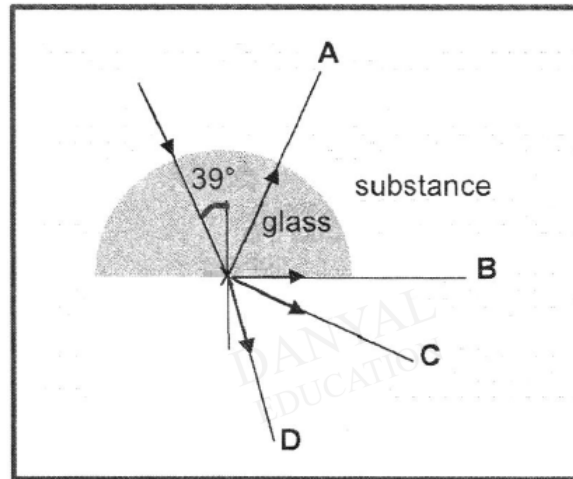
Q4

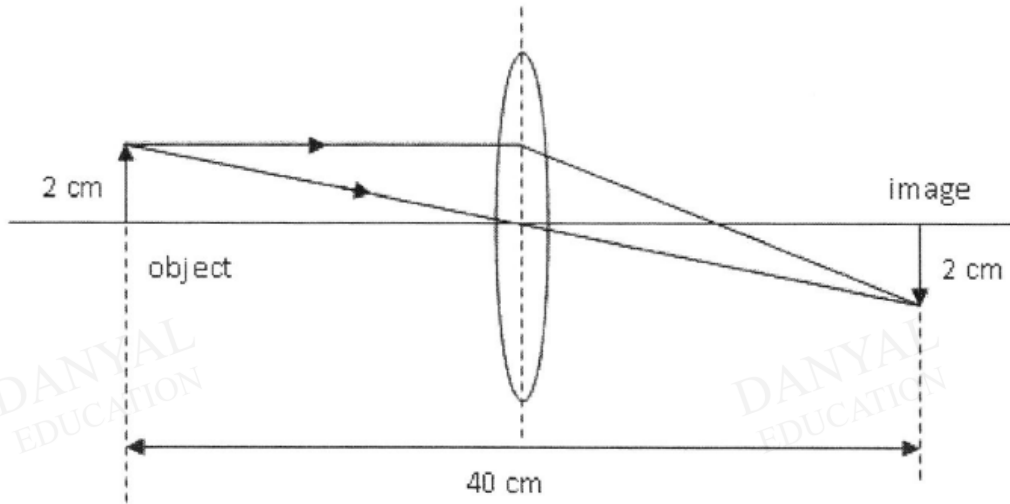A ray of light is incident on a crown glass hemisphere as shown. X is the centre of the hemisphere.

Which of the following shows how the ray of light will travel when the glass is enclosed in a substance of refractive index 1.7?

Q5

The ray diagram below shows the formation of an image when a converging lens was used.
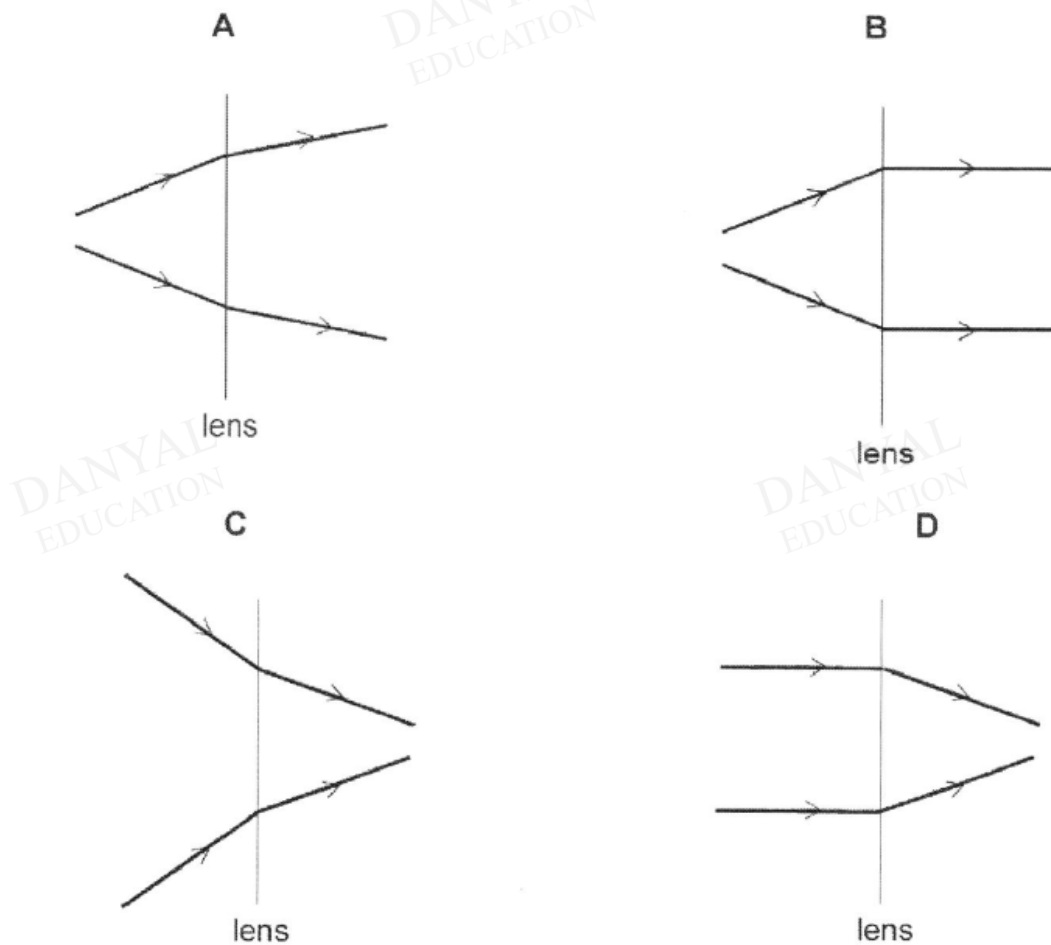

Which of the following object distance will result in a magnified and virtual image?

A   8.0 cm   **B**   11 cm   **C**   19 cm   **D**   21 cm

Q6

Which diagram shows ray of light passing through a diverging lens?

Q7

Diagram 1 shows a convex lens being used to view some small print on a page of a book. Diagram 2 shows the small print without the convex lens.
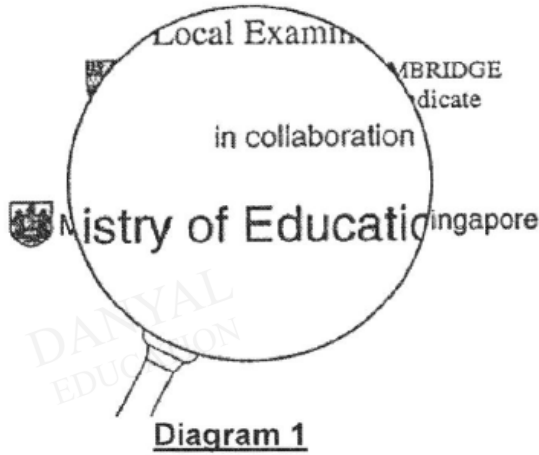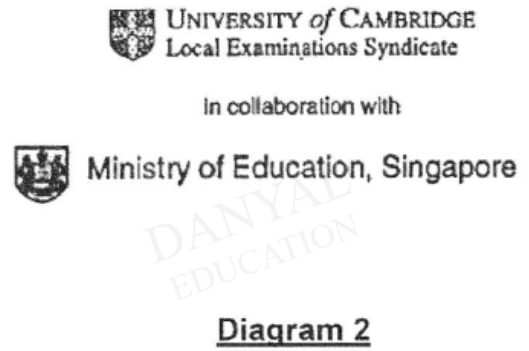

Diagram 1

University *of* Cambridge
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In collaboration with

Ministry of Education, Singapore

Diagram 2

Which of the following statements is **incorrect**?

A   The image of the small print is real.
B   The image distance is longer than the object distance.
C   The object distance is shorter than the focal length of the lens.
D   The small print and its image are on the same side of the lens.

Q8

28.   Mary stands at point **Q**. A wall separates her from four other classmates standing at points **R, S, T** and **U**. The wall blocks her direct line of sight to them.
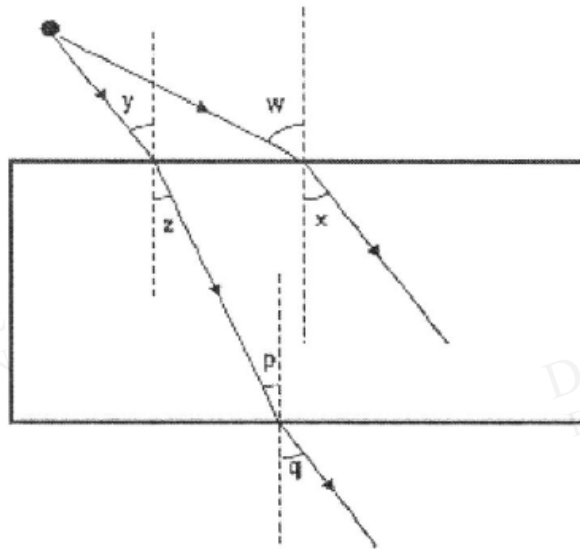   If a mirror is placed as shown below, how many persons can she see reflected in the mirror?
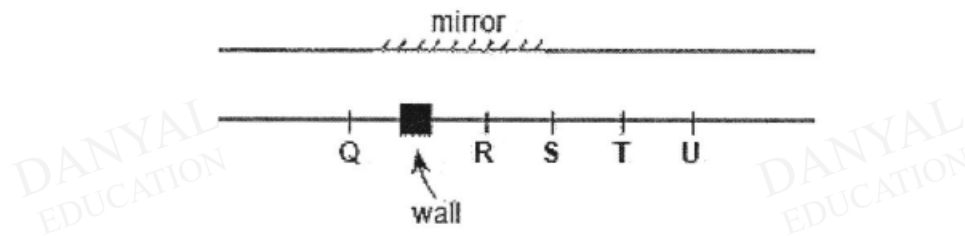
A   Four
B   Three
C   Two
D   One

Q9

29. The figure below shows two rays of light entering a glass block.

Which of the equations are **correct**?

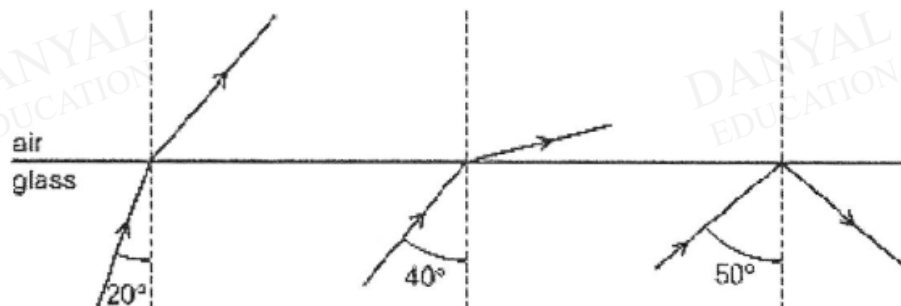I $\dfrac{w}{x} = \dfrac{y}{z}$ II $\dfrac{\sin y}{\sin z} = \dfrac{\sin p}{\sin q}$ III $\dfrac{\sin w}{\sin x} = \dfrac{\sin q}{\sin p}$ IV $\dfrac{\sin y}{\sin z} = \dfrac{\sin w}{\sin x}$

A   I and II
B   II and III
C   II and IV
D   III and IV

Q10

30. Three rays of light are incident on the boundary between a glass block and air. The angles of incidence are different as shown below.

What is a possible **critical angle** for light in the glass?

A   15°
B   30°
C   45°
D   60°

Answers

Light Test 2.0

Q1 D

Q2 B

Q3 D

Q4 D

Q5 A

Q6 C

Q7 A

Q8 A

Q9 D

Q10 C