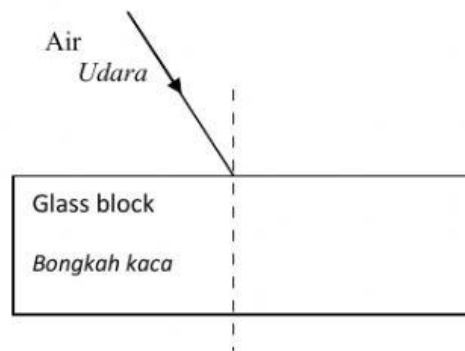


JUJ 2009

2. A light ray is refracted in a certain medium. Which of the following is not true ?
Sinar cahaya telah dibiaskan dalam suatu bahantara. Yang manakah di antara berikut tidak benar ?
- A. Its direction is changed / *Arahnya berubah*
 - B. Its speed is changed / *Kelajuannya berubah*
 - C. Its frequency is changed / *Frekuesinya berubah*

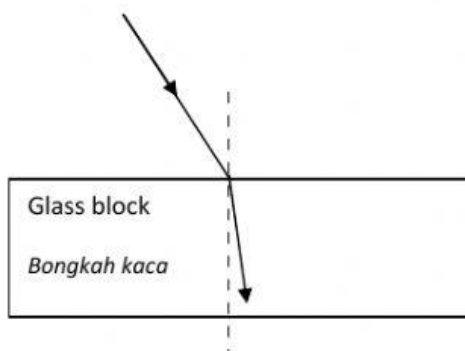
JUJ 2010

3. Diagram 3 shows a light ray is directed towards a glass block.
Rajah 3 menunjukkan satu alur cahaya menuju ke satu blok kaca

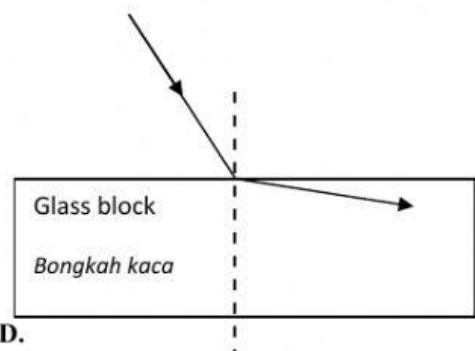


Which of the following represent the correct path of the ray after hitting the glass block?
Yang manakah merupakan arah alur cahaya selepas mengenai bongkah kaca itu.

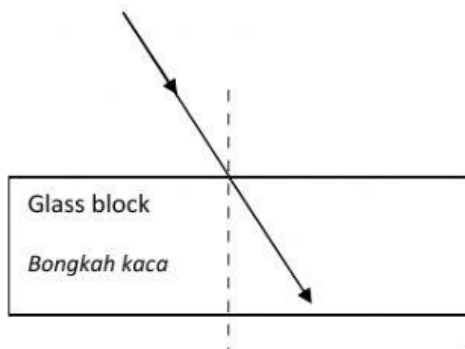
A



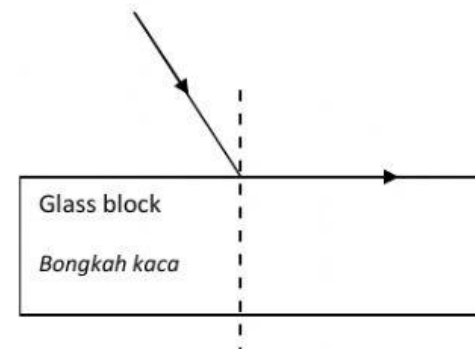
B



C

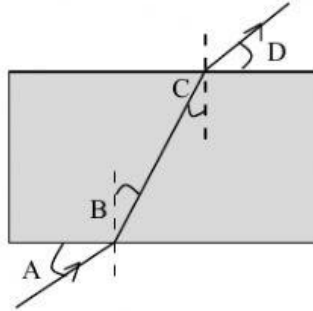


D



JUJ 2011

4. Diagram 4 shows a light ray directed into a glass block. Which is the angle of refraction?
Rajah 4 menunjukkan satu sinar cahaya ditujukan kepada satu bongkah kaca. Sudut yang manakah adalah sudut bias



JUJ 2014

5. Diagram 5 shows a ray of light striking a square block of glass KLMN. The refractive index of glass is 1.50.
Rajah 5 menunjukkan satu sinar cahaya dipancar kepada sebuah bongkah kaca, KLMN. Indeks biasan kaca ialah 1.50.

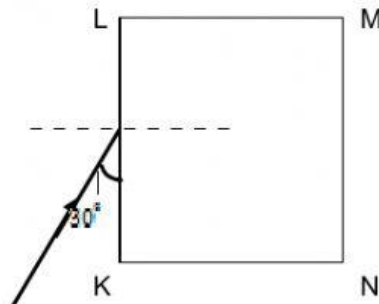


Diagram 13
 Rajah 13

Calculate the angle of refraction of the ray.

Hitungkan sudut biasan sinar cahaya tersebut.

- | | |
|-----------------------|-----------------------|
| A 20.7° | C 35.0° |
| B 30.7° | D 35.3° |

JUJ 2012

6. Diagram 6 below shows an observer looking at the image of a fish 50 cm from the water surface.

Rajah 6 di bawah menunjukkan pemerhati melihat imej ikan 50 cm dari permukaan air.

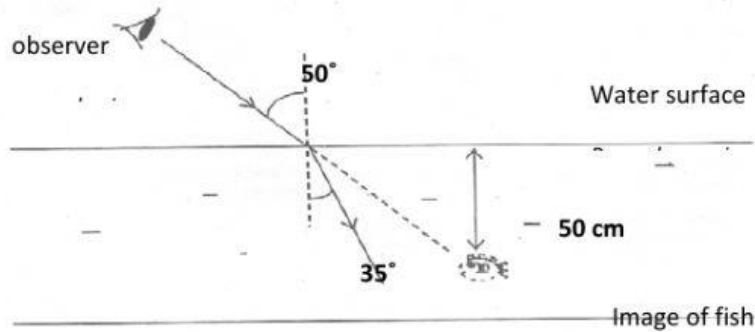


Diagram 6 / Rajah 6

What is the actual depth of the fish?
Berapakah kedalaman sebenar ikan?

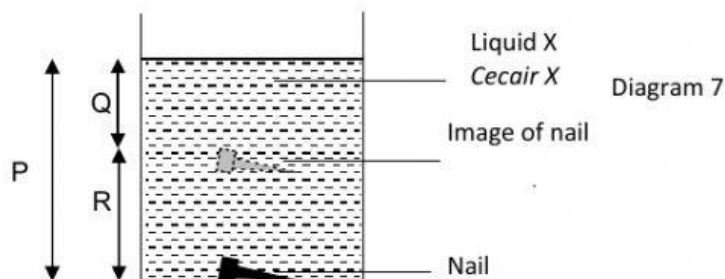
- A. 26.7 cm
B. 37.4 cm
C. 66.8 cm
D. 71.4 cm

JUJ 2014

7. Diagram 7 shows the image of a nail formed in liquid X as seen by an observer.
Rajah 7 menunjukkan imej paku yang terhasil dalam cecair X apabila dilihat oleh seorang pemerhati.



Observer



Which of the following shows the refractive index of liquid X?
Antara yang berikut yang manakah adalah indeks biasan cecair X itu?

- A. $\frac{P}{Q}$
B. $\frac{P}{R}$
C. $\frac{Q}{P}$
D. $\frac{R}{P}$

JUL 2014

8. The velocity of light in vacuum is $3 \times 10^8 \text{ ms}^{-1}$.
The refractive index of glass block is 1.60. What is the velocity of light in the glass block?
Halaju cahaya dalam vakum ialah $3 \times 10^8 \text{ ms}^{-1}$. Indeks biasan kaca ialah 1.60. Berapakah halaju cahaya dalam kaca?

- A** $1.1 \times 10^8 \text{ ms}^{-1}$ **C** $3.1 \times 10^8 \text{ ms}^{-1}$
B $1.9 \times 10^8 \text{ ms}^{-1}$ **D** $4.2 \times 10^8 \text{ ms}^{-1}$

JUL 2014

9. Diagram 9 shows three different medium with its refractive index.
Rajah 9 menunjukkan tiga medium yang mempunyai indeks biasan yang berbeza.

Medium <i>Medium</i>	Refractive index, n Indeks biasan, n
Glass <i>Kaca</i>	1.52
Water <i>Air</i>	1.33
Ice <i>Ais</i>	1.30

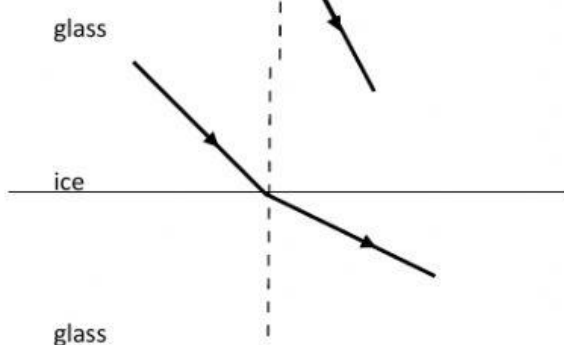
Diagram 9 / *Rajah 9*

Which of the following ray diagram is **correct**?
Yang manakah menunjukkan lintasan sinar dengan **betul**?

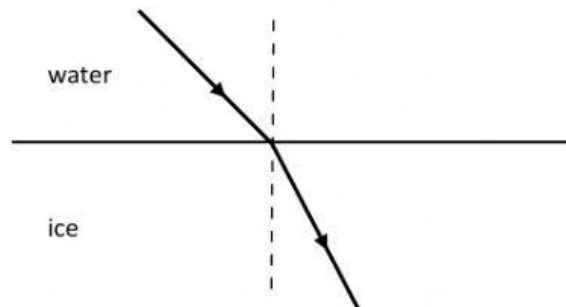
- A



- B**



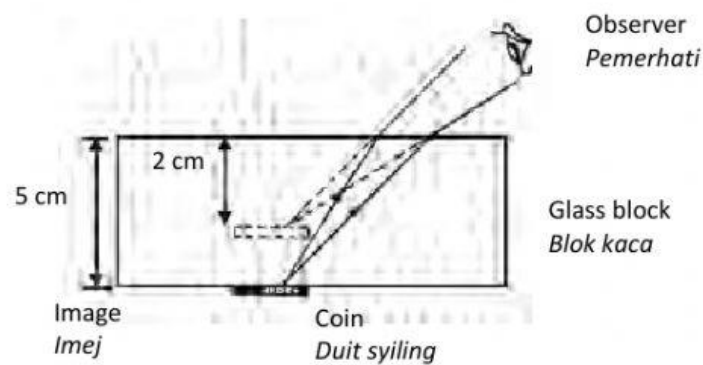
C



JUJ 2014

10. Diagram 10 shows the depth of an image of a coin seen when the coin is placed under a glass block.

Rajah 10 menunjukkan kedalaman bagi imej duit syiling yang diperhatikan apabila duit syiling itu diletak di bawah sekeping blok kaca.



Calculate the refractive index of the glass block.

Hitungkan indeks biasan bongkah kaca itu.

- | | |
|---------------|---------------|
| A 0.33 | C 2.50 |
| B 1.66 | D 3.00 |