Light – 2019 June

1. 0625/11/M/J/19/No.23

An object is placed 30 cm in front of a plane mirror.

Which statement describes the image of the object?

A The image is the same size and 30 cm from the object.

B The image is the same size and 60 cm from the object.

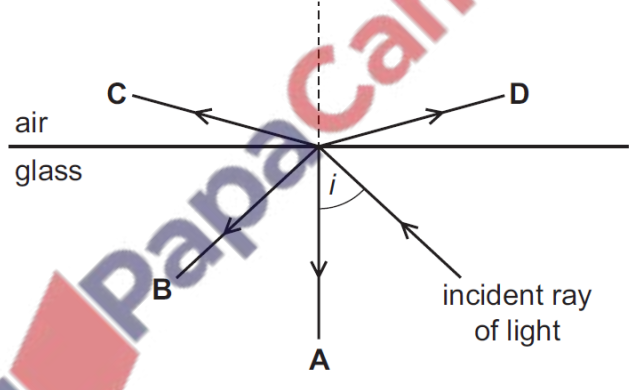
C The image is smaller and 30 cm from the object.

D The image is smaller and 60 cm from the object.

2. 0625/11/M/J/19/No.24

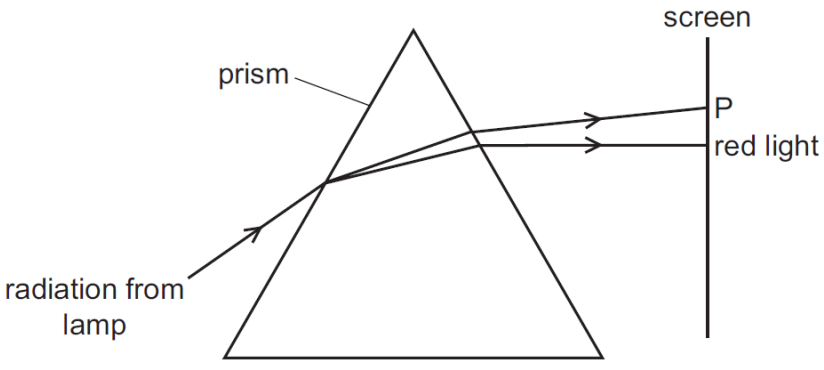
The diagram shows light incident at a glass-air boundary. The angle of incidence *i* of the ray is greater than the critical angle.

Which line shows the path of the light after it meets the boundary?



3. 0625/11$12$13/M/J/19/No.25

The diagram shows radiation from a lamp passing through a prism.



Which type of radiation is found at P?

A γ-rays

B infrared

C ultraviolet

D X-rays

4. 0625/12,22,23/M/J/19/No.23,21

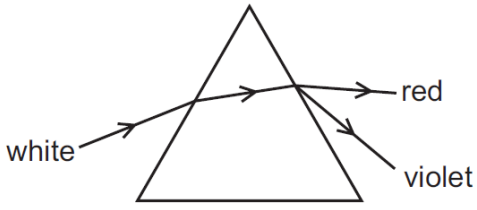
Which conditions are necessary for light to be totally internally reflected?

	the incident light is in	angle of incidence
A	the less dense medium	less than the critical angle
B	the less dense medium	greater than the critical angle
C	the more dense medium	less than the critical angle
D	the more dense medium	greater than the critical angle

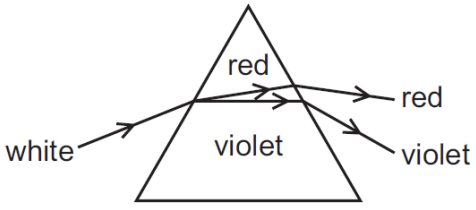
5. 0625/12/M/J/19/No.24

Which diagram shows the dispersion of white light by a glass prism?

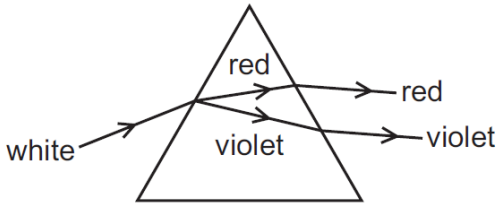
A



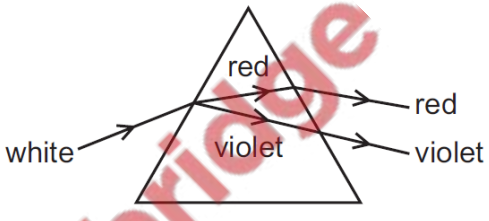
B



C



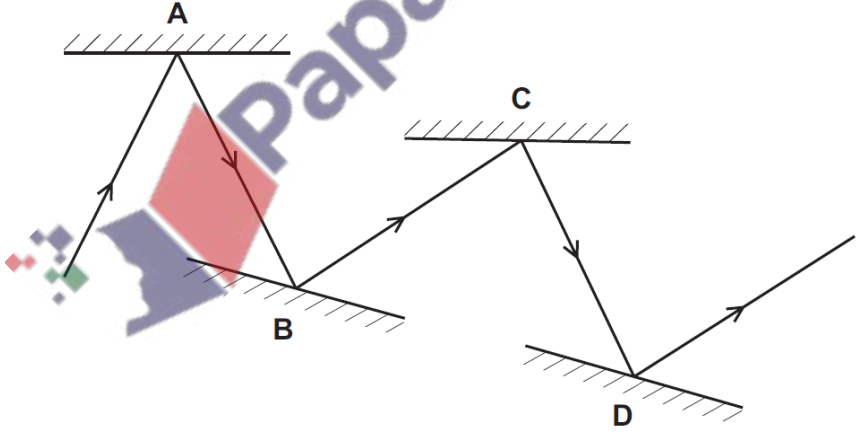
D



6. 0625/13/M/J/19/No.23

A student draws a ray diagram to show how a ray of light is reflected by a number of mirrors.

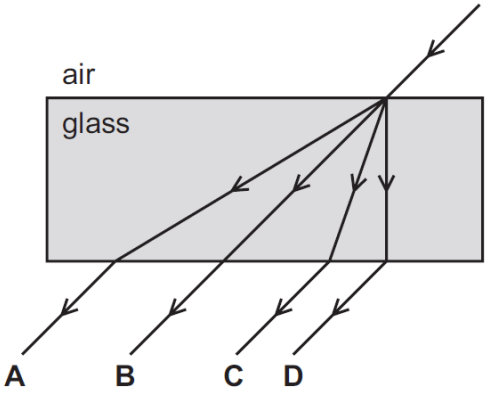
Which reflection has **not** been drawn correctly?



7. 0625/13/M/J/19/No.24

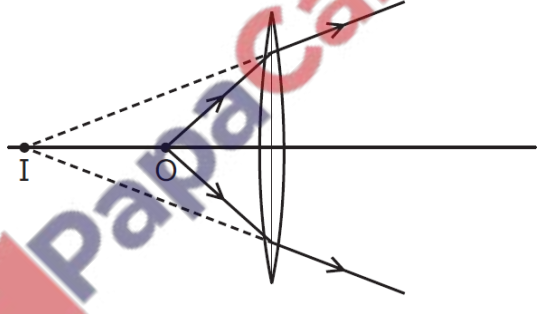
Light passes through a glass block.

What is the path of the light?



8. 0625/21/M/J/19/No.22

A small object O is placed near a converging lens, as shown. The lens forms an image I.



Which statement is correct?

A The image I is diminished.

B The image I is inverted.

C The image I is real.

D The object O is closer to the lens than its principal focus.

9. 0625/22/M/J/19/No.22

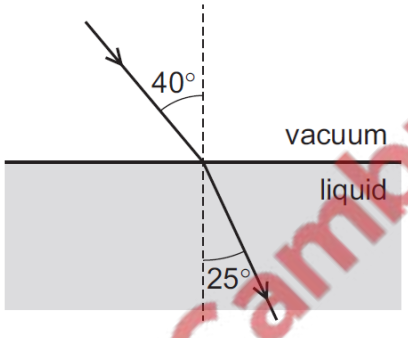
Light is travelling through air. The light strikes a glass block at an angle of incidence of 45°. The glass has a refractive index of 1.4.

What is the angle of refraction of the light as it enters the glass?

A 29° **B** 30° **C** 32° **D** 82°

10. 0625/23/M/J/19/No.22

A beam of light passes through a vacuum and then enters a liquid. The diagram shows the path it takes.



The light travels through the vacuum at a speed of 3.0×10^8 m/s.

What is the speed of light in the liquid?

A 1.9×10^8 m/s

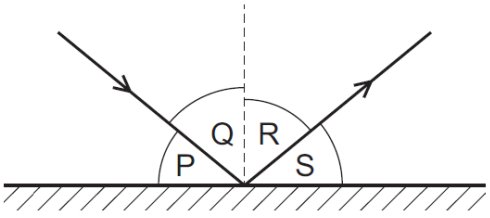
B 2.0×10^8 m/s

C 4.6×10^8 m/s

D 4.8×10^8 m/s

11. 0625/12/F/M/19/No.22

A ray of light is reflected by a plane mirror.



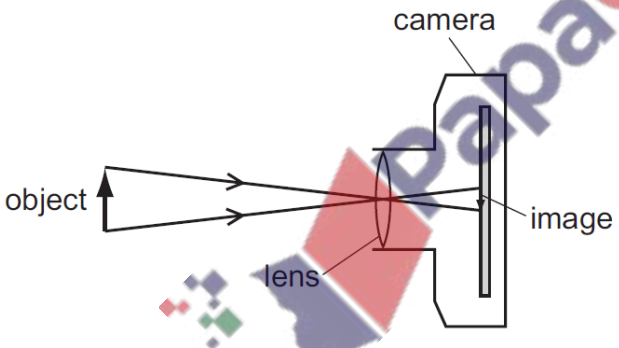
Which row shows the angle of incidence and the angle of reflection?

	angle of incidence	angle of reflection
A	P	Q
B	P	S
C	Q	R
D	R	S

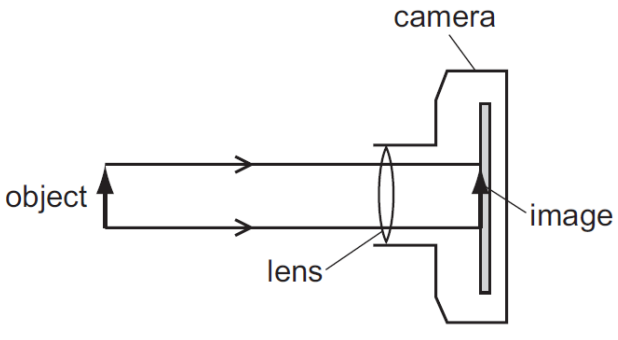
12. 0625/12, 22/F/M/19/No.23, 24

Which diagram correctly represents rays of light passing through a converging lens in a camera?

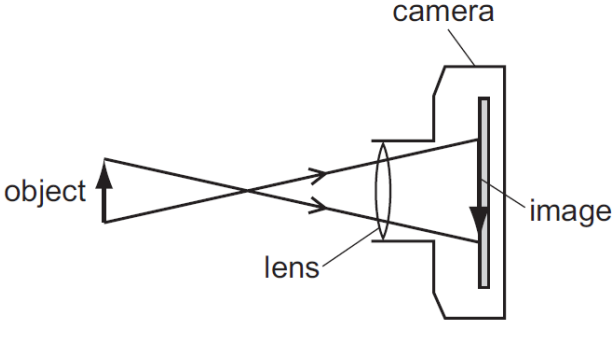
A



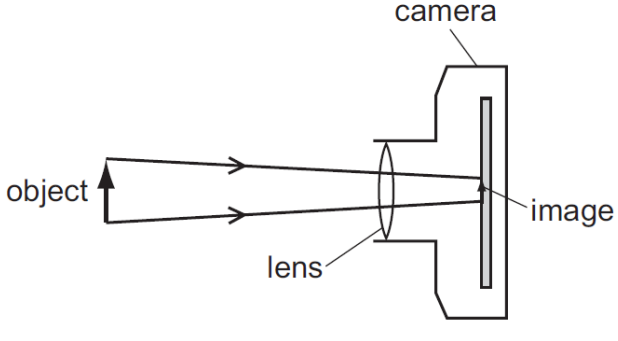
B



C

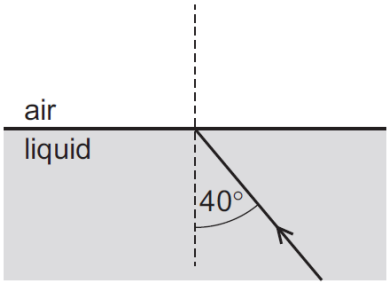


D



13. 0625/22/F/M/19/No.23

A narrow beam of light is travelling through a transparent liquid. It meets the surface as shown, at an angle of incidence of 40°. The refractive index of the liquid is 1.5.



What is the angle of refraction as the light enters the air?

A 25° **B** 27° **C** 60° **D** 75°