1 - (0625-S 2012-Paper 1 (Core)/1-Q21) - *RAYS AND WAVES*

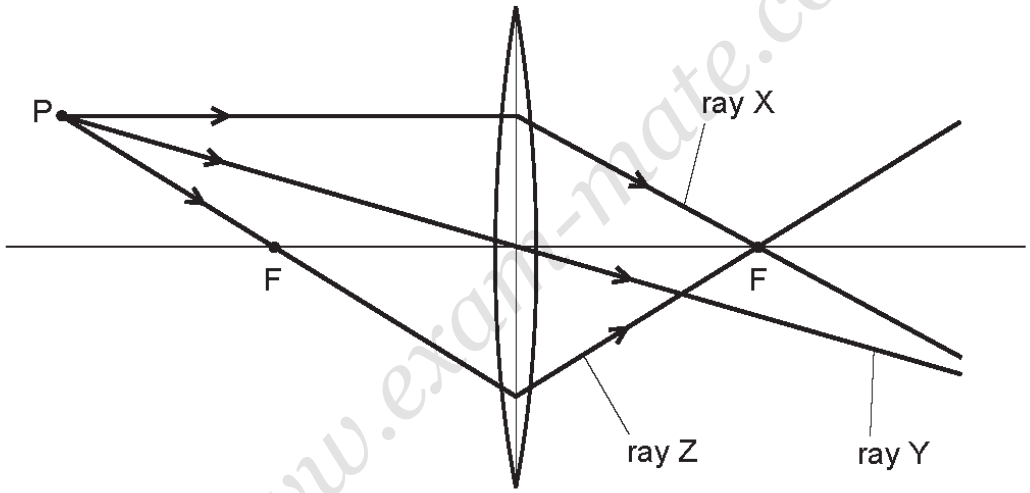
Which row correctly describes light waves and radio waves?

	light waves	radio waves
A	longitudinal	longitudinal
B	longitudinal	transverse
C	transverse	longitudinal
D	transverse	transverse

2 - (0625-S 2012-Paper 1 (Core)/3-Q21) - *RAYS AND WAVES*

A student draws three rays of light from point P through a converging lens.

Each point labelled F is a principal focus of the lens.



Which of the rays are drawn correctly?

A ray Y only

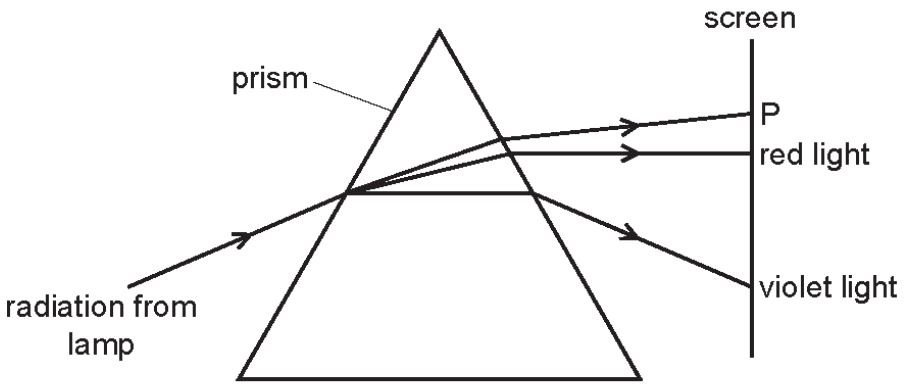
B ray Z only

C ray X and ray Y

D ray X and ray Z

3 - (0625-S 2012-Paper 1 (Core)/2-Q22) - *RAYS AND WAVES*

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



Which type of radiation is found at P?

A γ-rays

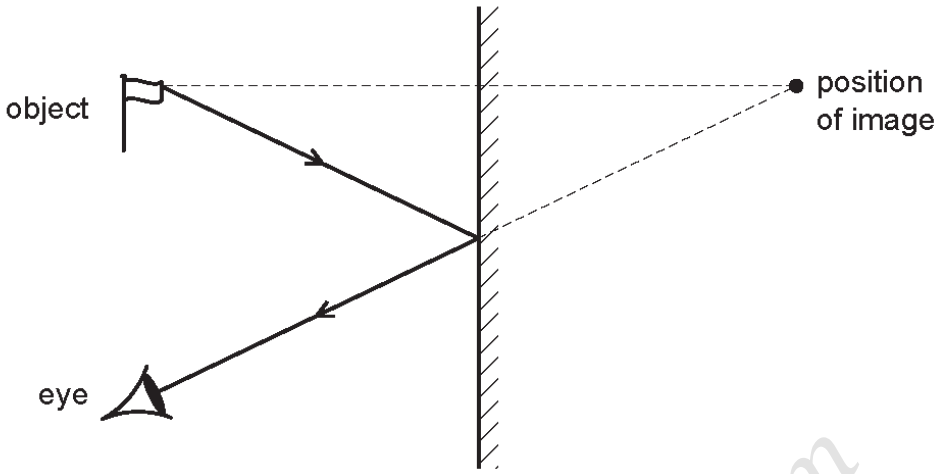
B infra-red

C ultraviolet

D X-rays

4 - (0625-S 2012-Paper 1 (Core)/3-Q22) - *RAYS AND WAVES*

The image formed by a plane mirror is upright.



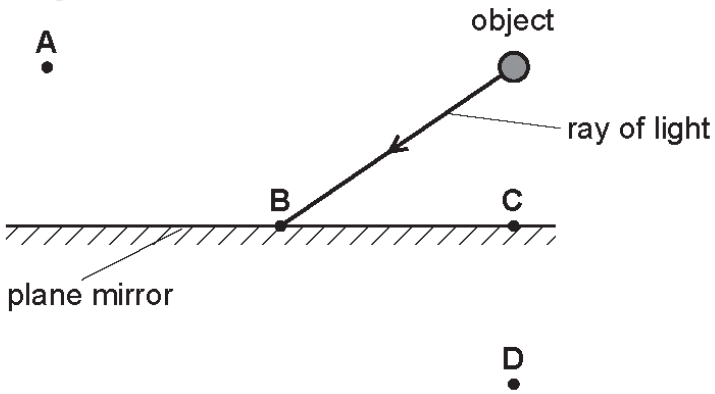
What are the other characteristics of the image?

	laterally inverted (left to right)	magnified (larger than the object)	virtual
A	no	yes	yes
B	yes	no	no
C	yes	no	yes
D	yes	yes	no

5 - (0625-S 2012-Paper 1 (Core)/2-Q23) - *RAYS AND WAVES*

A plane mirror is used to form an image of an object.

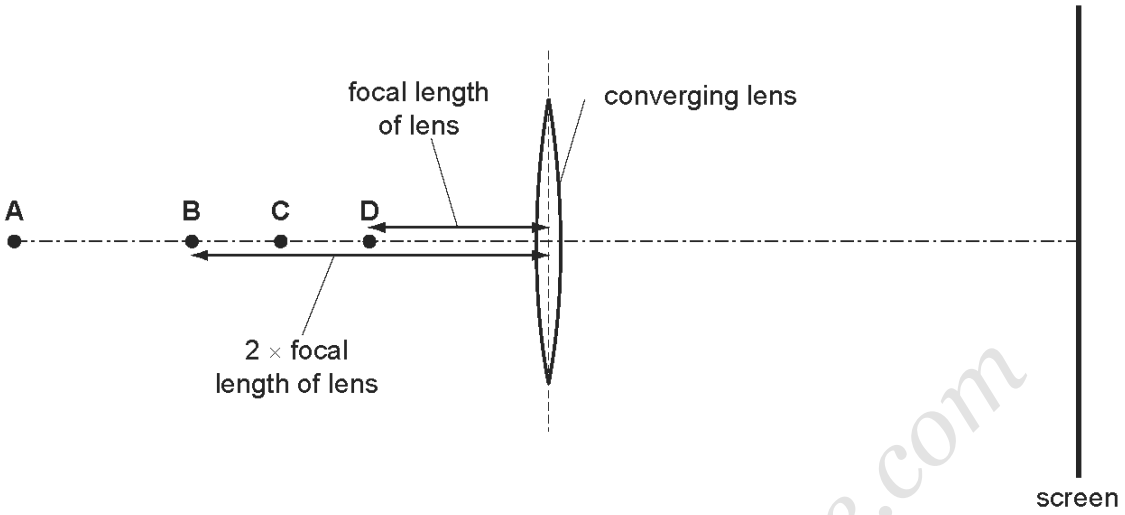
At which labelled point is the image formed?



6 - (0625-S 2012-Paper 1 (Core)/2-Q24) - *RAYS AND WAVES*

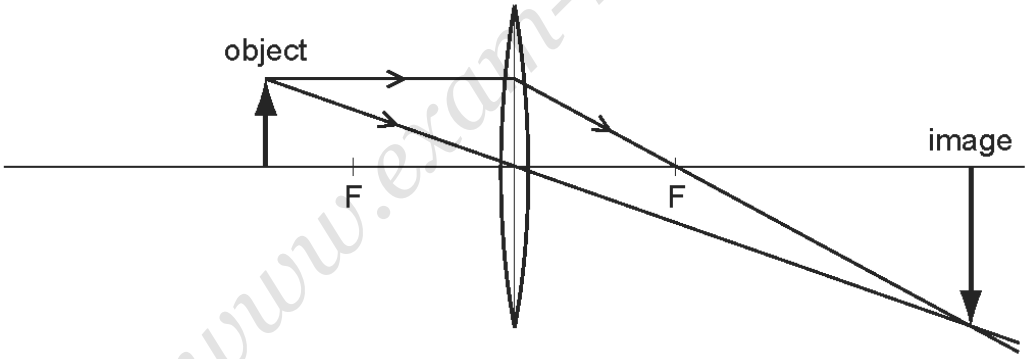
A converging lens in a projector is used to make an **enlarged** image of a small piece of film on a screen.

At which labelled point could the piece of film be placed so that the lens produces this image?



7 - (0625-W 2012-Paper 1 (Core)/1-Q23) - *RAYS AND WAVES*

A thin converging lens forms an image.



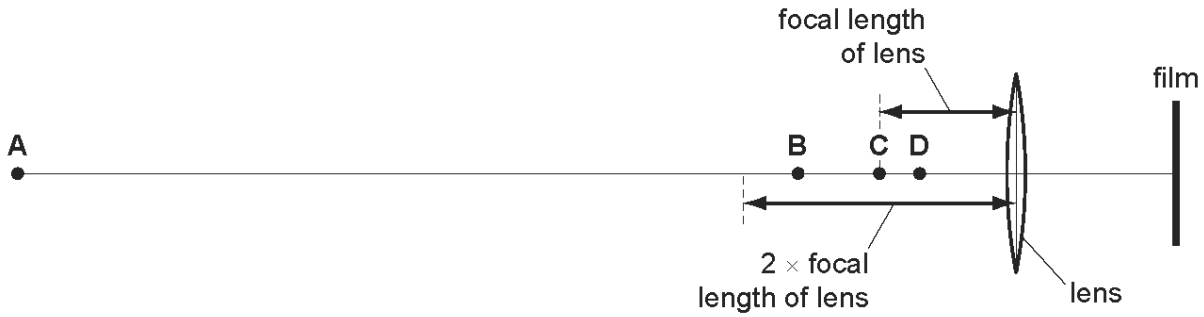
What is the nature of this image and can it be formed on a screen?

	nature of image	can be formed on a screen?
A	not real	no
B	not real	yes
C	real	no
D	real	yes

8 - (0625-W 2012-Paper 1 (Core)/3-Q23) - *RAYS AND WAVES*

The converging lens in a camera is used to make an image on a film.

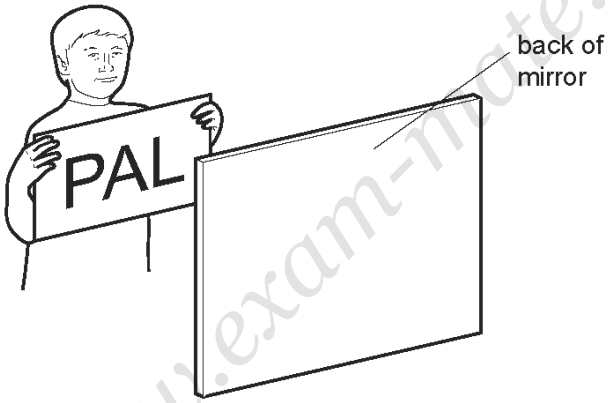
At which labelled point could a large object be placed so that it makes a smaller image?



9 - (0625-W 2012-Paper 1 (Core)/1-Q24) - *RAYS AND WAVES*

A piece of paper has 'PAL' written on it.

A student holds the paper in front of a plane mirror.



What does the student see?

A

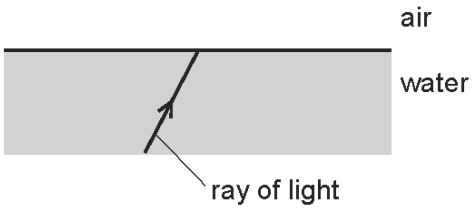
B

C

D

10 - (0625-W 2012-Paper 1 (Core)/3-Q24) - *RAYS AND WAVES*

A ray of light in water is incident on the surface. The angle of incidence is much smaller than the critical angle.



What happens to this ray?

A It is completely reflected.

B It is completely refracted.

C It is partially reflected and partially refracted.

D It is refracted at an angle of refraction of 90°.

11 - (0625-S 2013-Paper 1 (Core)/1-Q19) - *RAYS AND WAVES*

Visible light and γ-rays are both waves.

How may they correctly be described?

	visible light	γ-rays
A	longitudinal	longitudinal
B	longitudinal	transverse
C	transverse	longitudinal
D	transverse	transverse

12 - (0625-S 2013-Paper 1 (Core)/3-Q20) - *RAYS AND WAVES*

Different parts of the electromagnetic spectrum are used for different purposes. Below are four statements about parts of the spectrum.

statement 1: Infra-red waves are used in television remote controllers.

statement 2: Radio waves are used to transmit television pictures from satellites to Earth.

statement 3: Ultra-violet waves are used for intruder alarms.

statement 4: X-rays are used for security checks.

Which statements are correct?

A 1 and 2 **B** 1 and 4 **C** 2 and 3 **D** 3 and 4

13 - (0625-S 2013-Paper 1 (Core)/2-Q21) - *RAYS AND WAVES*

Which group of electromagnetic radiations is arranged in order of increasing frequency?

A infra-red, visible light, ultraviolet

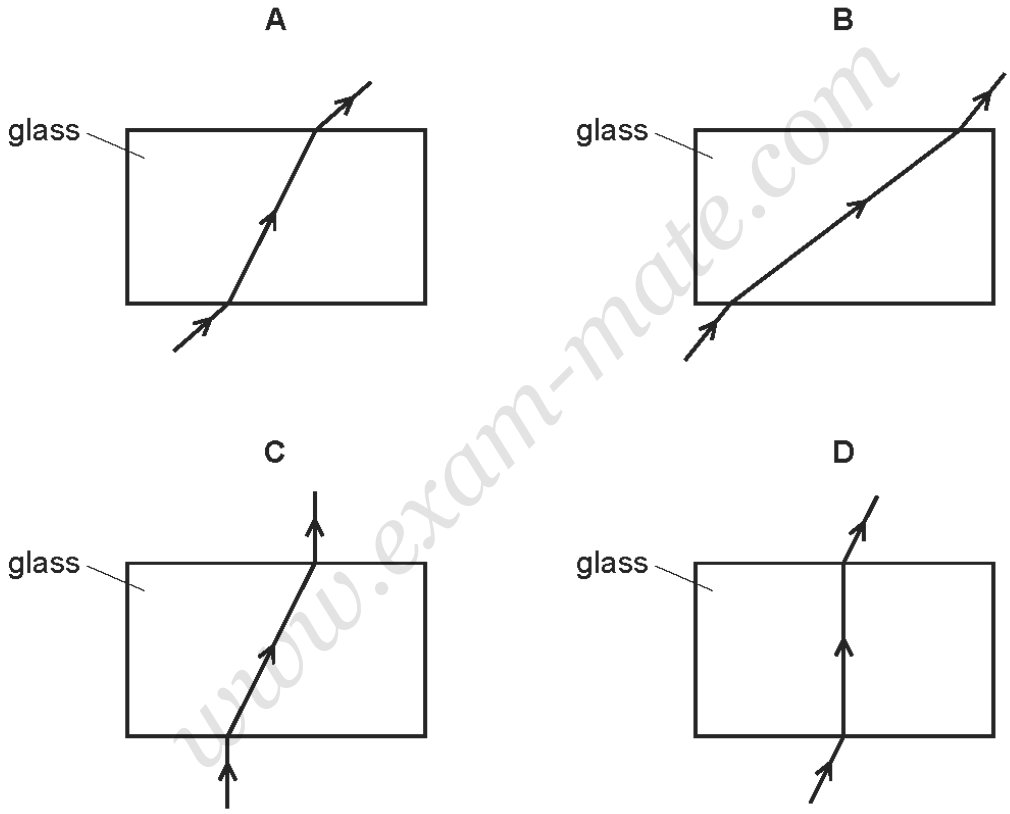
B γ-rays, X-rays, infra-red

C ultra-violet, visible light, radio waves

D X-rays, radio waves, γ-rays

14 - (0625-S 2013-Paper 1 (Core)/1-Q22) - *RAYS AND WAVES*

Which diagram shows how a ray of light could pass through a glass block in air?



15 - (0625-S 2013-Paper 1 (Core)/2-Q22) - *RAYS AND WAVES*

An electronic engineer makes devices which can receive television pictures from satellites.

Which type of electromagnetic radiation must these devices be able to receive?

A infra-red waves

B microwaves

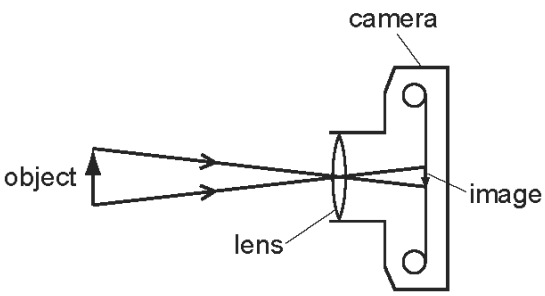
C radio waves

D ultra-violet waves

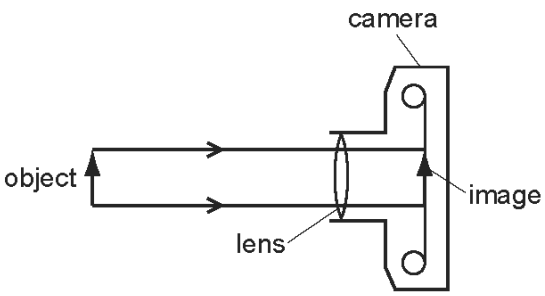
16 - (0625-S 2013-Paper 1 (Core)/1-Q23) - *RAYS AND WAVES*

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

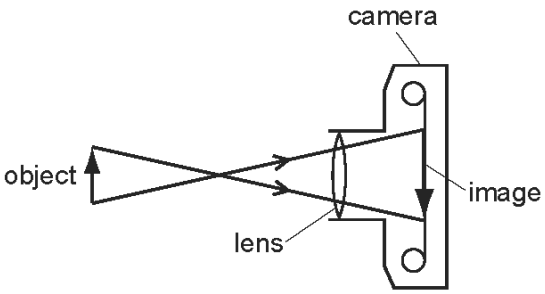
A



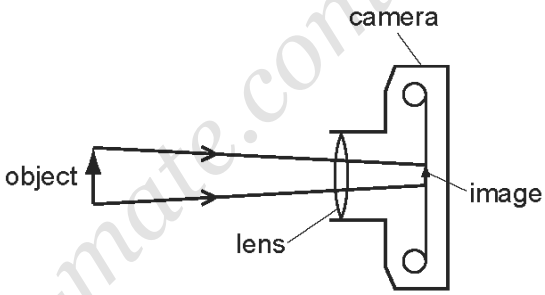
B



C

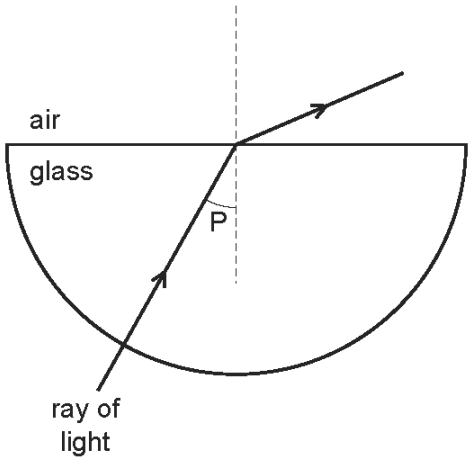


D



17 - (0625-W 2013-Paper 1 (Core)/2-Q20) - *RAYS AND WAVES*

The diagram shows a ray of light passing through a semicircular glass block into air.



Which row gives the correct name for angle P and states how angle P compares with the critical angle?

	name of angle P	angle P compared with the critical angle
A	angle of incidence	larger than the critical angle
B	angle of incidence	smaller than the critical angle
C	angle of refraction	larger than the critical angle
D	angle of refraction	smaller than the critical angle

18 - (0625-W 2013-Paper 1 (Core)/1-Q21) - *RAYS AND WAVES*

The table gives common uses for three types of electromagnetic wave.

Which row correctly identifies the waves?

	satellite television	terrestrial television (not satellite)	television remote controllers
A	infra-red waves	microwaves	radio waves
B	microwaves	radio waves	infra-red waves
C	radio waves	infra-red waves	microwaves
D	radio waves	microwaves	infra-red waves

19 - (0625-W 2013-Paper 1 (Core)/3-Q21) - *RAYS AND WAVES*

Infra-red waves, microwaves, radio waves and sound waves are all used for communications.

Which waves travel at the same high speed in a vacuum?

A infra-red waves, microwaves and radio waves

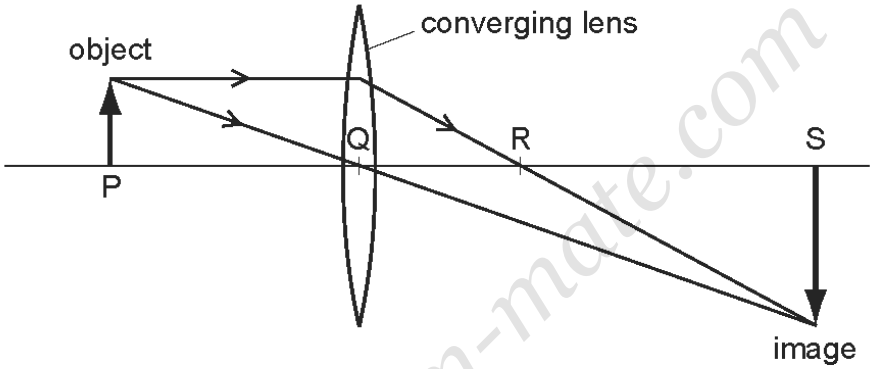
B infra-red waves, microwaves and sound waves

C infra-red waves, radio waves and sound waves

D microwaves, radio waves and sound waves

20 - (0625-W 2013-Paper 1 (Core)/3-Q22) - *RAYS AND WAVES*

The diagram represents a converging lens forming an image of an object.



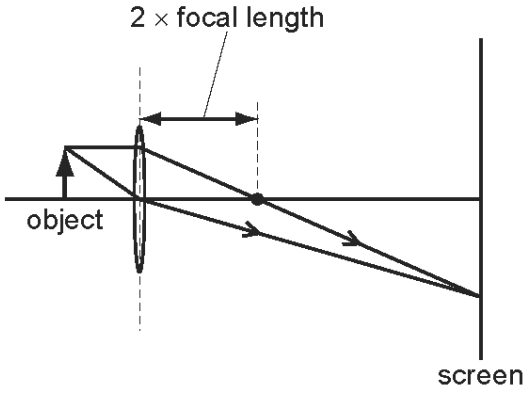
Which distance is the focal length of the lens?

A PQ **B** PR **C** QR **D** QS

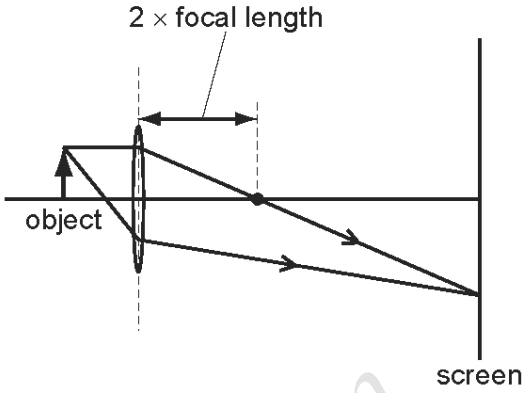
21 - (0625-W 2013-Paper 1 (Core)/1-Q23) - *RAYS AND WAVES*

Which diagram shows how an image of an object is formed on a screen by a converging lens?

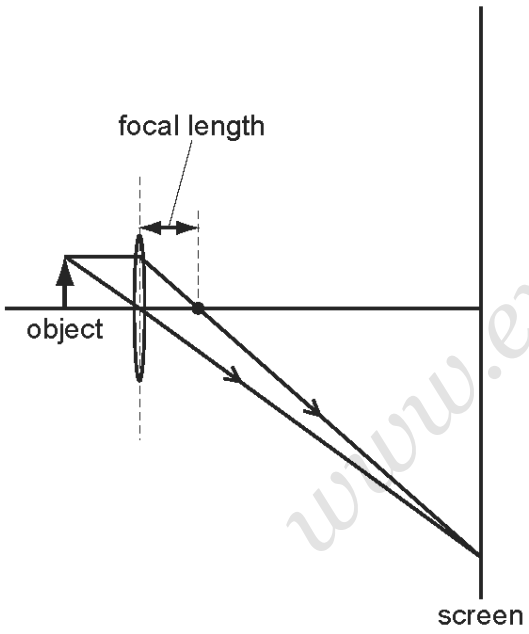
A



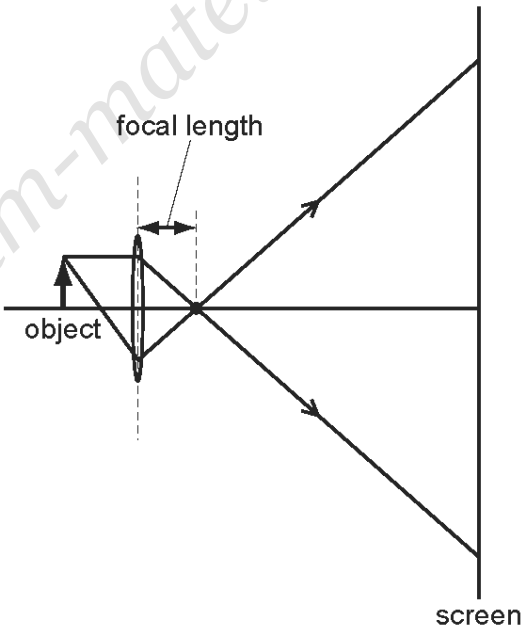
B



C



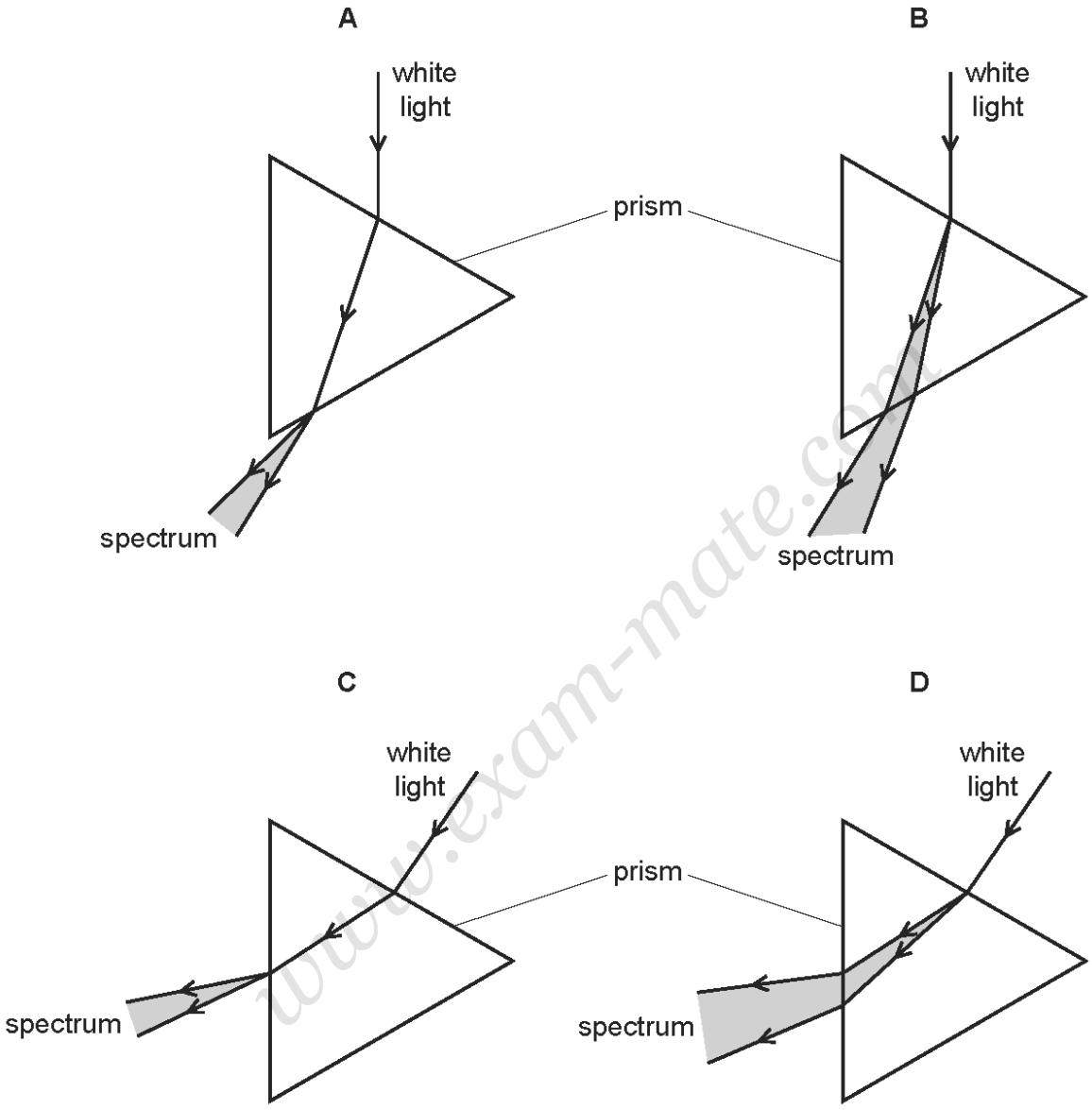
D



22 - (0625-W 2013-Paper 1 (Core)/3-Q23) - *RAYS AND WAVES*

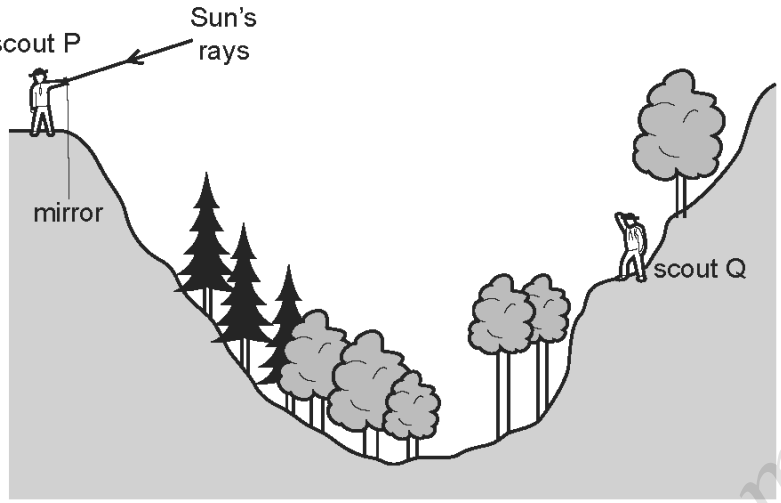
A teacher demonstrates the dispersion of white light using a triangular glass prism.

Which diagram shows how this dispersion happens?

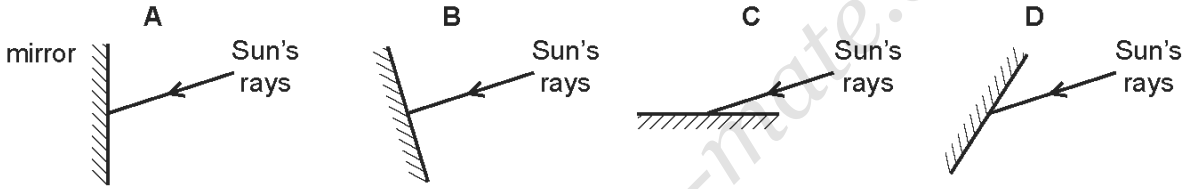


23 - (0625-S 2014-Paper 1 (Core)/1-Q18) - *RAYS AND WAVES*

Scout P signals to scout Q on the other side of a valley by using a mirror to reflect the Sun's rays.



Which mirror position would allow the Sun's rays to be reflected to scout Q?



24 - (0625-S 2014-Paper 1 (Core)/1-Q20) - *RAYS AND WAVES*

Which list shows electromagnetic waves in order of increasing frequency?

A visible light, X-rays, γ-rays

B visible light, γ-rays, X-rays

C X-rays, γ-rays, visible light

D γ-rays, X-rays, visible light

25 - (0625-S 2014-Paper 1 (Core)/1-Q21) - *RAYS AND WAVES*

Which statement about a converging lens is **not** correct?

A A ray parallel to the principal axis of the lens is refracted through the principal focus.

B All rays of light refracted by the lens pass through the principal focus.

C The distance between the centre of the lens and the principal focus is the focal length.

D The principal focus of the lens is a point on the principal axis.

26 - (0625-S 2014-Paper 1 (Core)/2-Q21) - *RAYS AND WAVES*

Which statement about ultraviolet waves is correct?

A They are used in television remote controllers.

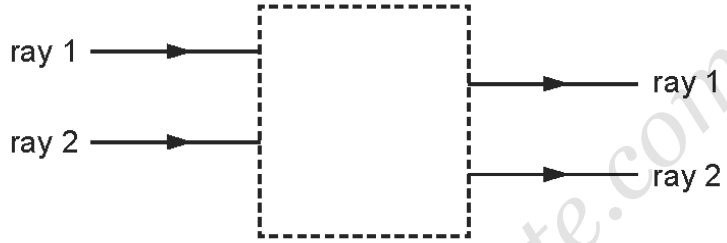
B They can be detected by the human eye.

C They travel as longitudinal waves.

D They have the same speed in a vacuum as radio waves.

27 - (0625-S 2014-Paper 1 (Core)/1-Q22) - *RAYS AND WAVES*

Rays of light enter and leave a box.



What could be inside the box to make the rays behave as shown?

A a converging lens

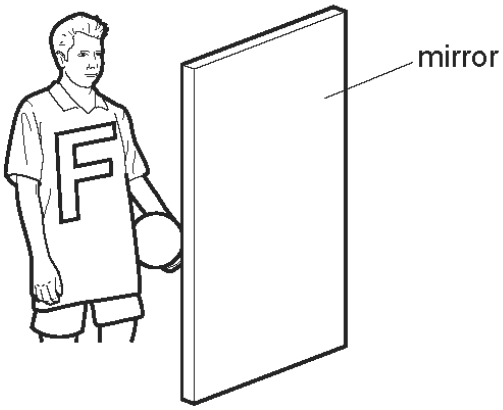
B a parallel-sided glass block

C a plane mirror

D a triangular prism

28 - (0625-S 2014-Paper 1 (Core)/2-Q22) - *RAYS AND WAVES*

A boy wears a shirt with a letter F on the front. He stands in front of a plane mirror.



What does he see in the mirror?

A **B** **C** **D**

29 - (0625-W 2014-Paper 1 (Core)/1-Q20) - *RAYS AND WAVES*

Light waves pass from air into glass and are refracted.

What always remains constant when this happens?

A direction

B frequency

C speed

D wavelength

30 - (0625-W 2014-Paper 1 (Core)/1-Q21) - *RAYS AND WAVES*

Which type of electromagnetic wave is used in airport security scanners?

A infra-red

B microwaves

C radio waves

D X-rays