



# Interactive Example Candidate Responses

Paper 3 (May / June 2016), Question 8

**Cambridge IGCSE™**  
**Physics 0625**



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- 8 A student directs a ray of light towards a plane mirror, as shown in Fig. 8.1.

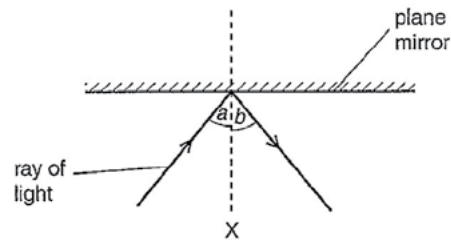


Fig. 8.1

- (a) (i) Name the line labelled X.

..... Line of incidence reflection symmetry ..... [1]

- (ii) When angle  $a$  is  $45^\circ$ , angle  $b$  is also  $45^\circ$ .

Angle  $a$  is changed to  $20^\circ$ .

What is the new value of angle  $b$ ? Tick **one** box.

$20^\circ$  ☒
 $25^\circ$  ☐
 $45^\circ$  ☐
 $65^\circ$  ☐
 $80^\circ$  ☐

[1]

Select  
page

Your  
Mark

8(a)(i)

8(a)(ii)

8(b)

8(c)

Q8	Mark scheme
(a)(i)	<u>normal</u>
(a)(ii)	$20^\circ$
(b)	d g f R OR S
(c)	any two rays correctly drawn from top of O: ray parallel to axis, through lens, and beyond F ray undeviated through centre of lens and beyond ray through F, through lens, then parallel to axis inverted image correctly drawn and positioned at intersection of two rays

(b) The student now makes the ray of light from Fig. 8.1 pass into a glass block, as shown in Fig. 8.2.

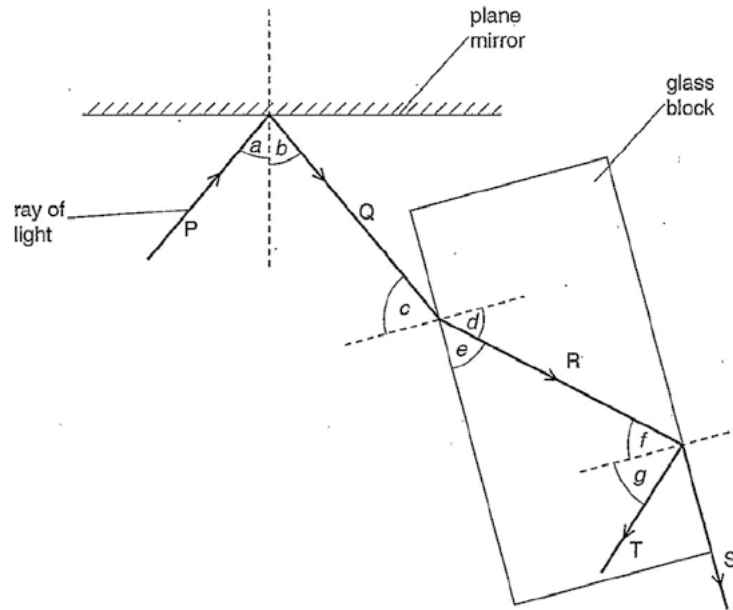


Fig. 8.2

Complete the table, using the labels from Fig. 8.2. The first label is done for you.

description	label
an angle of incidence	a
an angle of refraction	d
an internally reflected angle	g
a critical angle	f
a refracted ray	R

[4]

Your  
Mark

8(a)(i)

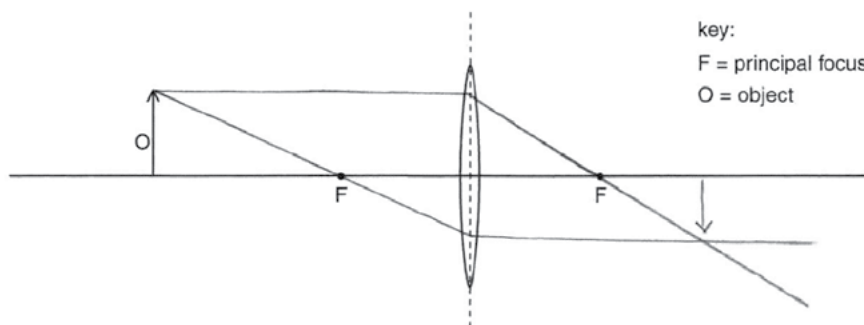
8(a)(ii)

8(b)

8(c)

Q8	Mark scheme
(a)(i)	normal
(a)(ii)	20°
(b)	d g f R OR S
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(c) The student uses a converging lens to produce an image of an object. Fig. 8.3 shows the arrangement.



key:  
F = principal focus  
O = object

Fig. 8.3

On Fig. 8.3, using a ruler, carefully draw two rays from the object O to locate the position of the image. Use an arrow to represent the image. [3]

[Total: 9]

Select  
page

Your  
Mark

8(a)(i)

8(a)(ii)

8(b)

8(c)

Q8	Mark scheme
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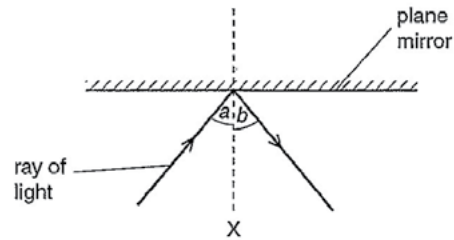


Fig. 8.1

(a) (i) Name the line labelled X.

Angle of reflection [1]

(ii) When angle  $a$  is  $45^\circ$ , angle  $b$  is also  $45^\circ$ .

Angle  $a$  is changed to  $20^\circ$ .

What is the new value of angle  $b$ ? Tick **one** box.

$20^\circ$

☒

$25^\circ$

☐

$45^\circ$

☐

$65^\circ$

☐

$80^\circ$

☐

[1]

Select  
page

Your  
Mark

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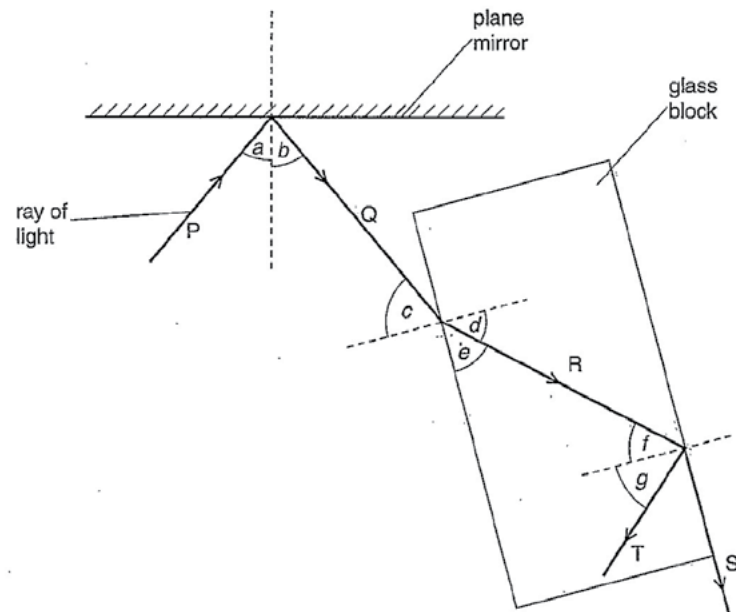


Fig. 8.2

Complete the table, using the labels from Fig. 8.2. The first label is done for you.

description	label
an angle of incidence	a
an angle of refraction	c
an internally reflected angle	e
a critical angle	<del>x</del> f.
a refracted ray	g

[4]

Your  
Mark

8(a)(i)

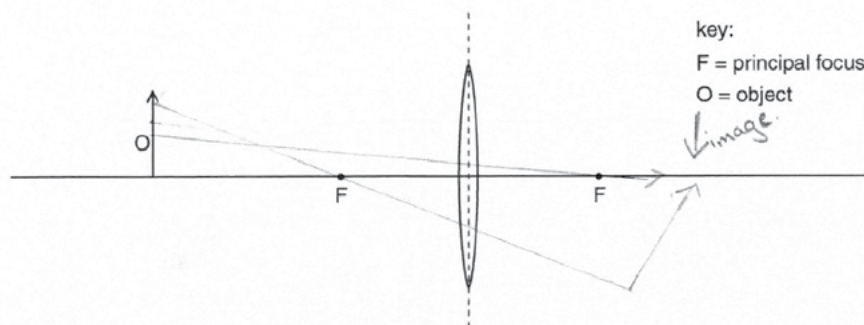
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8(b)

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