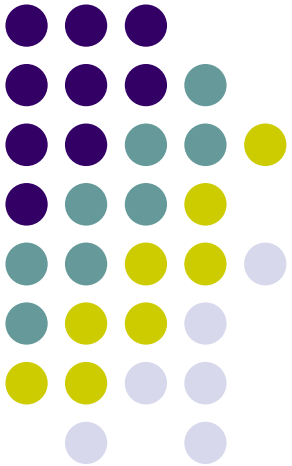
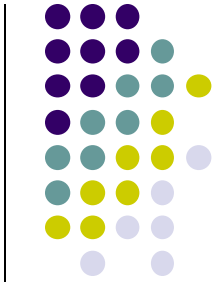
Optics Quiz 6

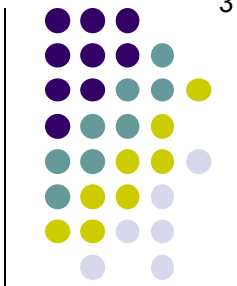
This quiz is intended to be taken after completion of Chapters 24-26



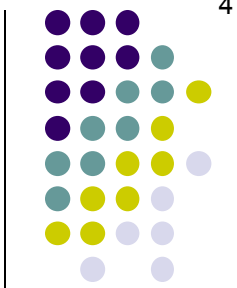


No, you can’t use a calculator (and you don’t need one anyway)

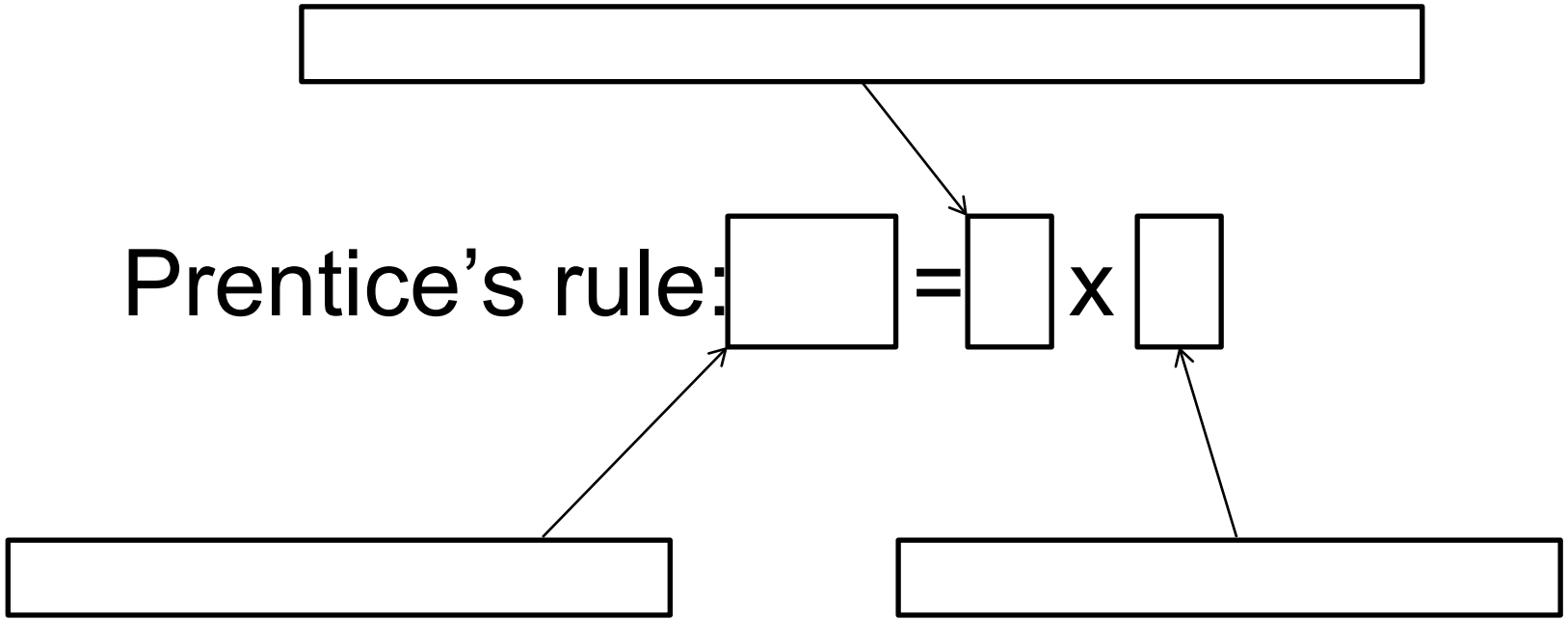
Note that some questions are callbacks from previous quizzes

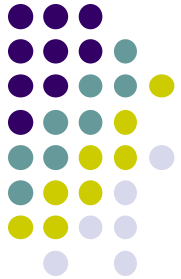


Bifocal adds come in two basic flavors: *top* and *top*



Bifocal adds come in two basic flavors: *Round top* and *flat top*


Prentice’s rule:
=
x



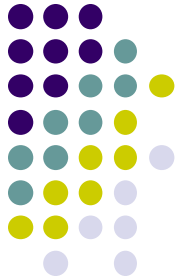
h = distance from the optical center of the lens in cm

Prentice's rule: PD = h x D

PD = Amount of induced prism

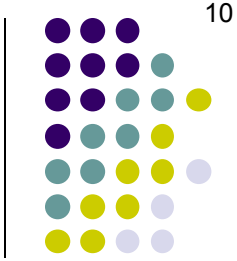
D = Dioptric power of the lens

- [ ] refers to a **sudden** change in image location that occurs when gaze shifts from the distance lens to the add segment

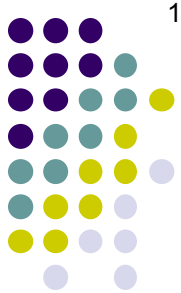


- *Image jump* refers to a **sudden** change in image location that occurs when gaze shifts from the distance lens to the add segment

- [ ] refers to the total apparent distance between an image viewed through the distance lens versus through the add segment



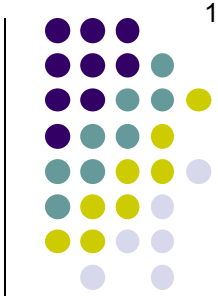
- *Image displacement* refers to the total apparent distance between an image viewed through the distance lens versus through the add segment



Which Add Is Best?

- The choice of segment type for *Myopes vs hyperopes* is easy--a -top segment minimizes both *and*
- On the other hand, the choice of segment type for depends on whether one needs to minimize *vs*

Myopes vs hyperopes



Which Add Is Best?

- The choice of segment type for myopes is easy--a flat-top segment minimizes both jump *and* displacement
- On the other hand, the choice of segment type for hyperopes depends on whether one needs to minimize jump *vs* displacement

- Plane mirrors
  - The only rule you need to remember is that, for any light ray, the _____ equals the _____ (with respect to the normal)

- Plane mirrors
  - The only rule you need to remember is that, for any light ray, the *angle of incidence* equals the *angle of reflection* (with respect to the normal)

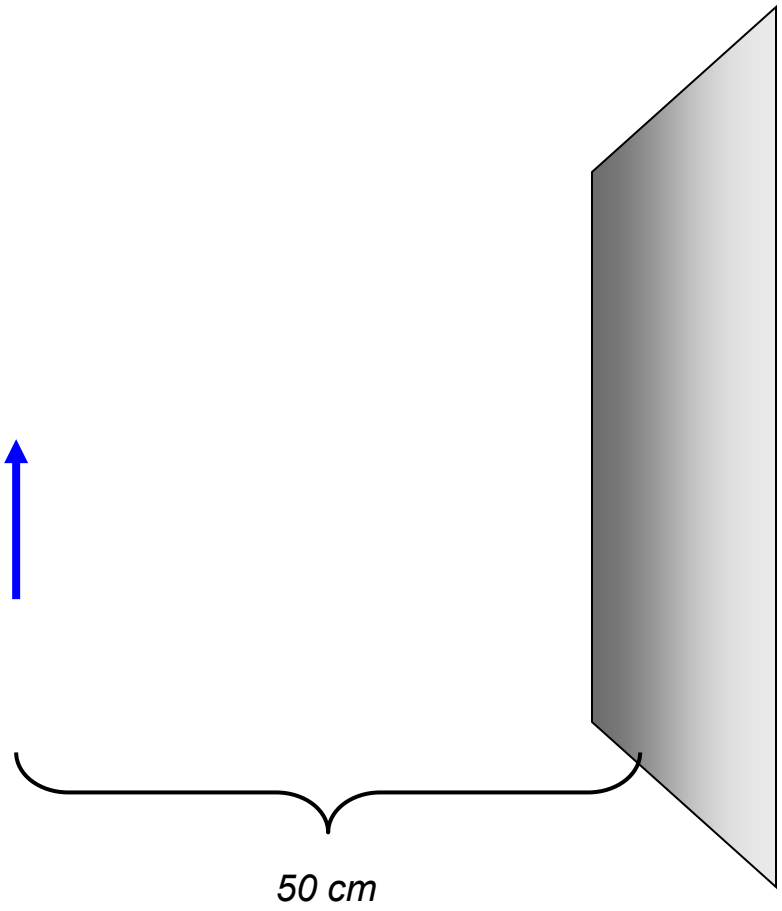
An object is located 50 cm from the surface of a plane mirror.

a) Where is the image located?

b) Is the image upright or inverted?

c) Is the image real or virtual?

d) Is the image magnified/minified?



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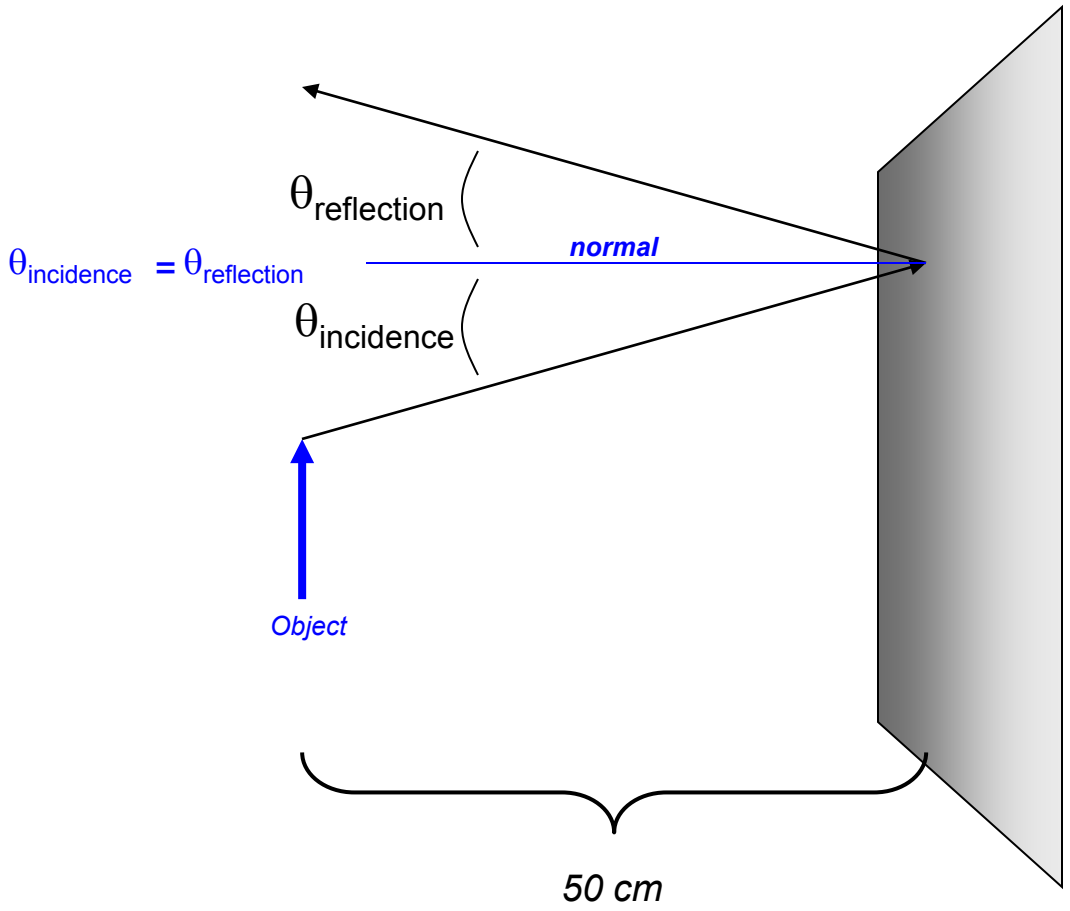

For plane mirrors, the *angle of reflection* equals the *angle of incidence* (with respect to the normal)

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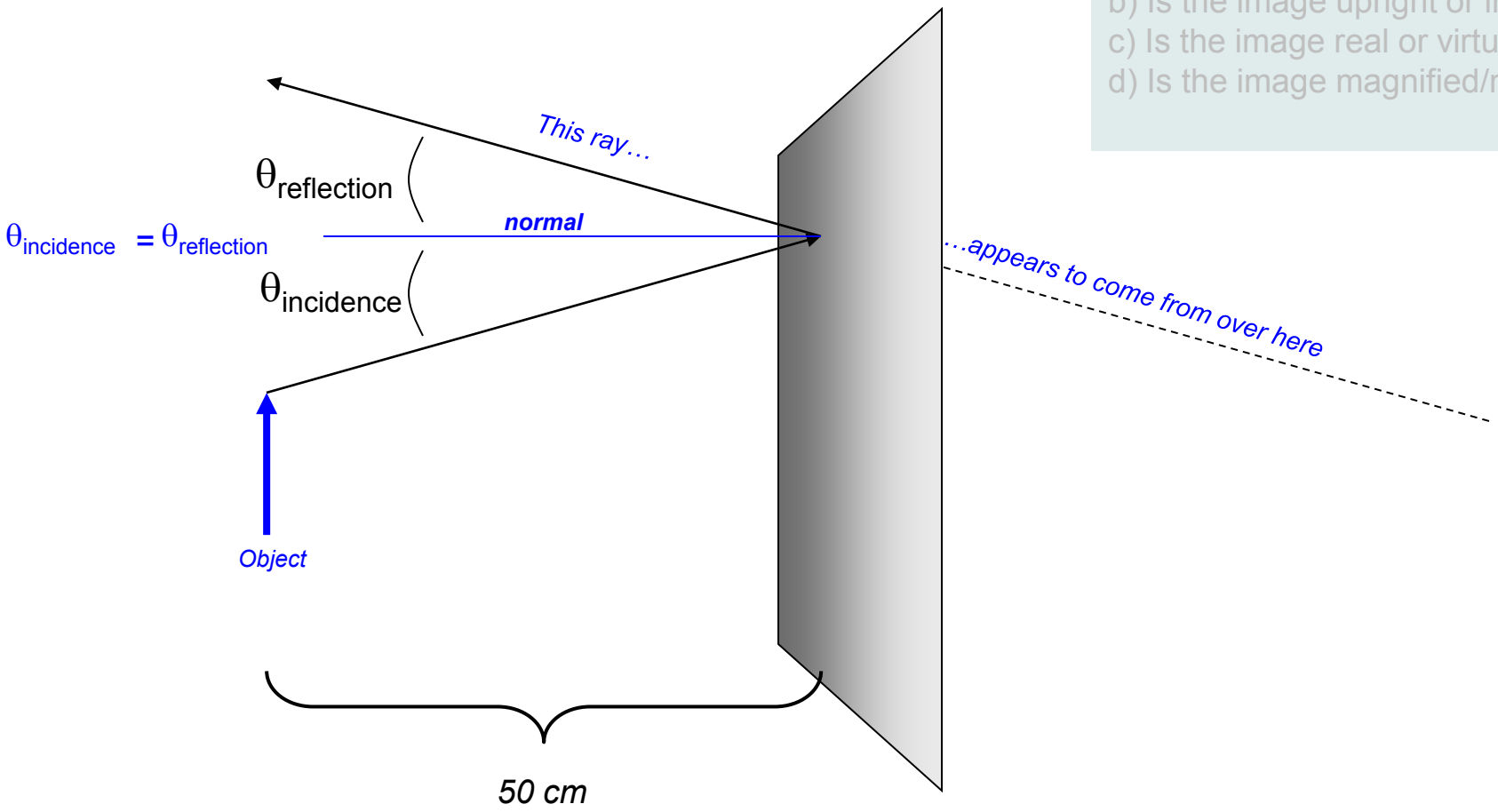

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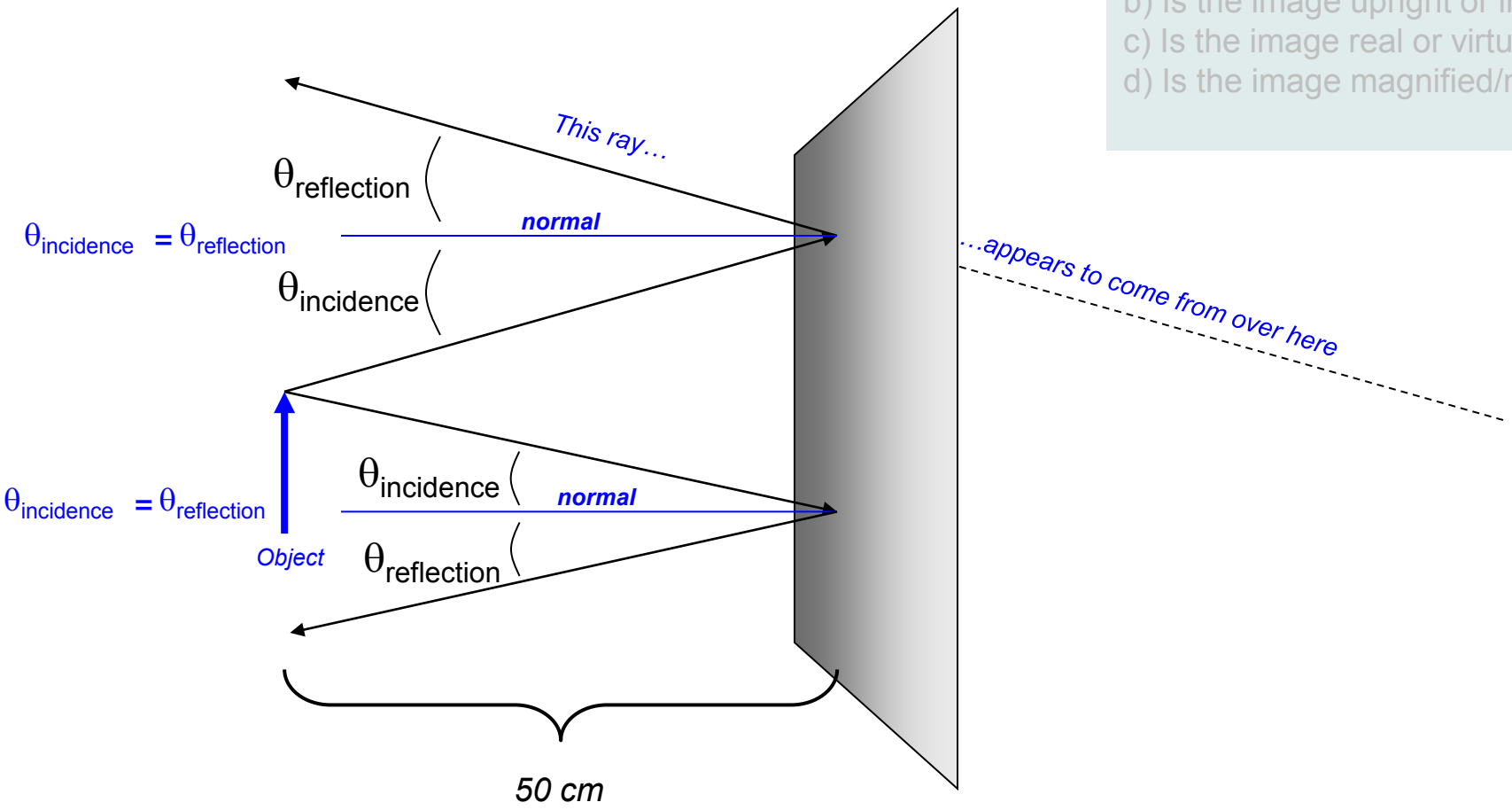

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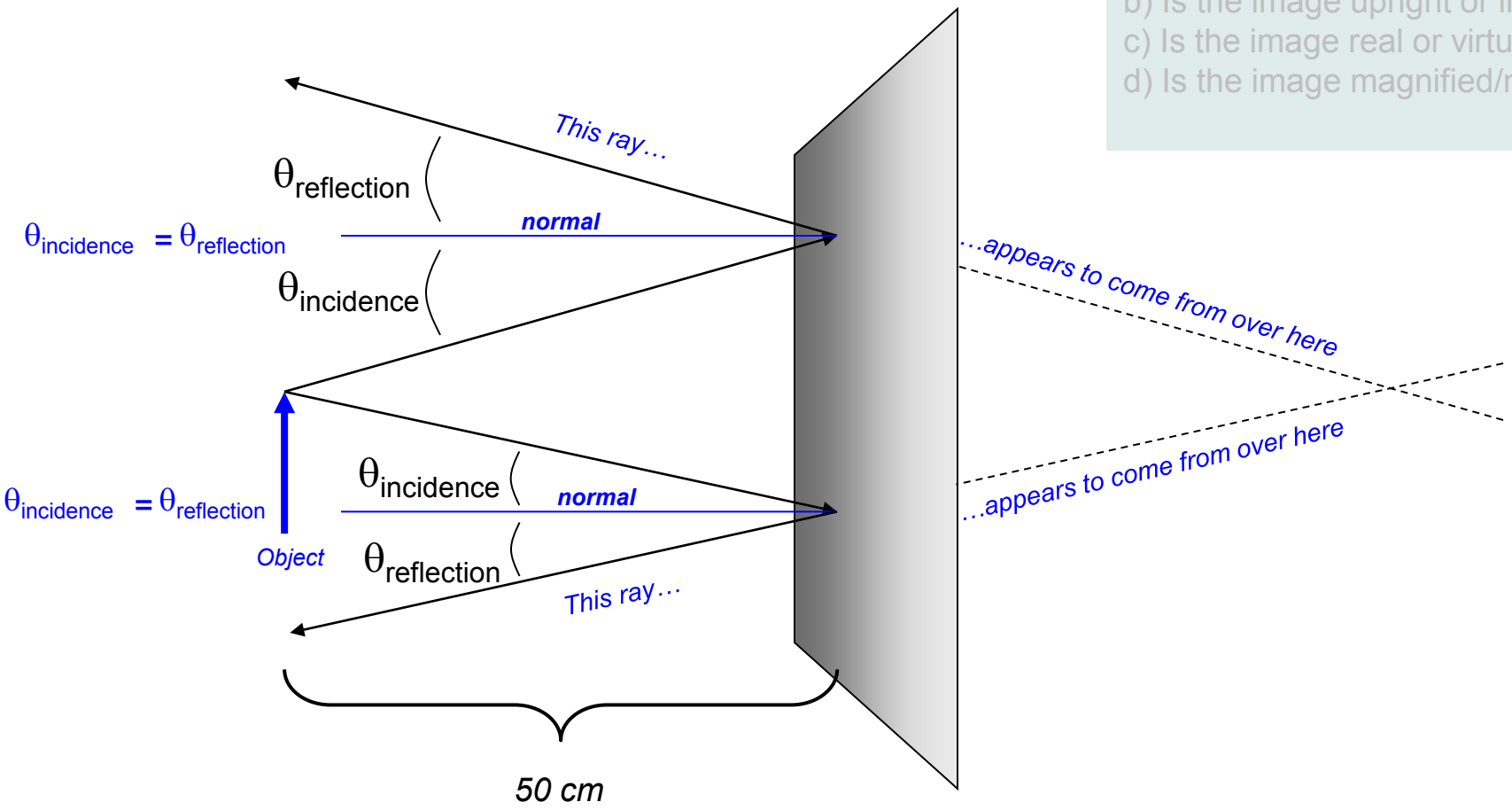

An object is located 50 cm from the surface of a plane mirror.
a) Where is the image located?
b) Is the image **upright** or inverted?
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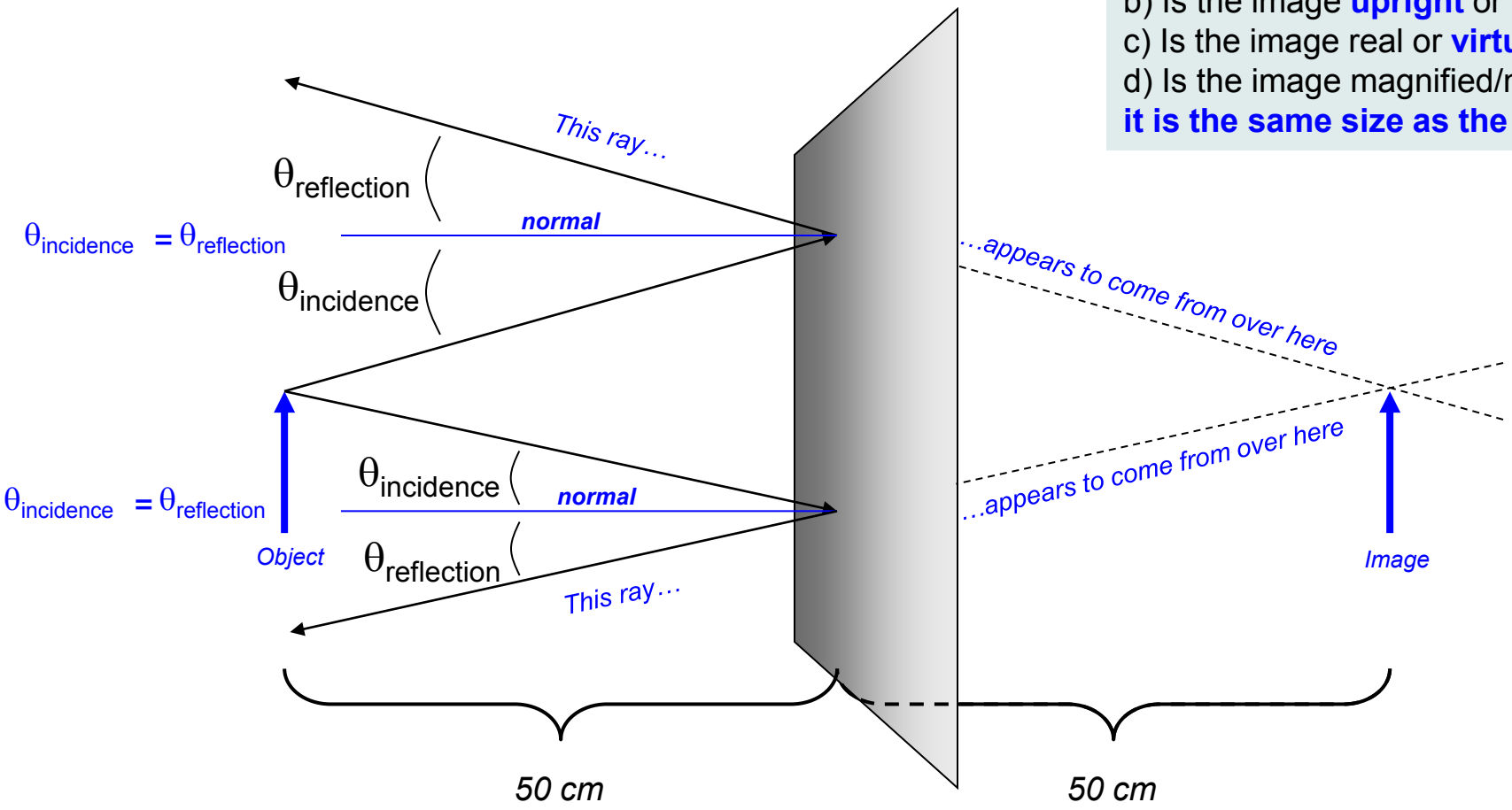
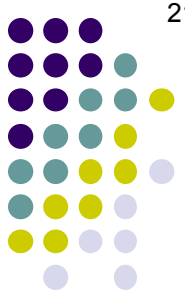
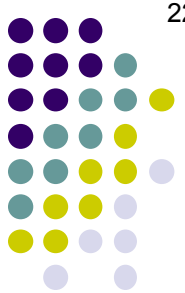
d) Is the image magnified/minified?
it is the same size as the object





Dioptric power of a mirror $= \frac{1}{\square} = \frac{2}{\square}$



$$\text{Dioptric power of a mirror} = \frac{1}{\text{Focal length}} = \frac{2}{r}$$

An object is located in front of a convex mirror.

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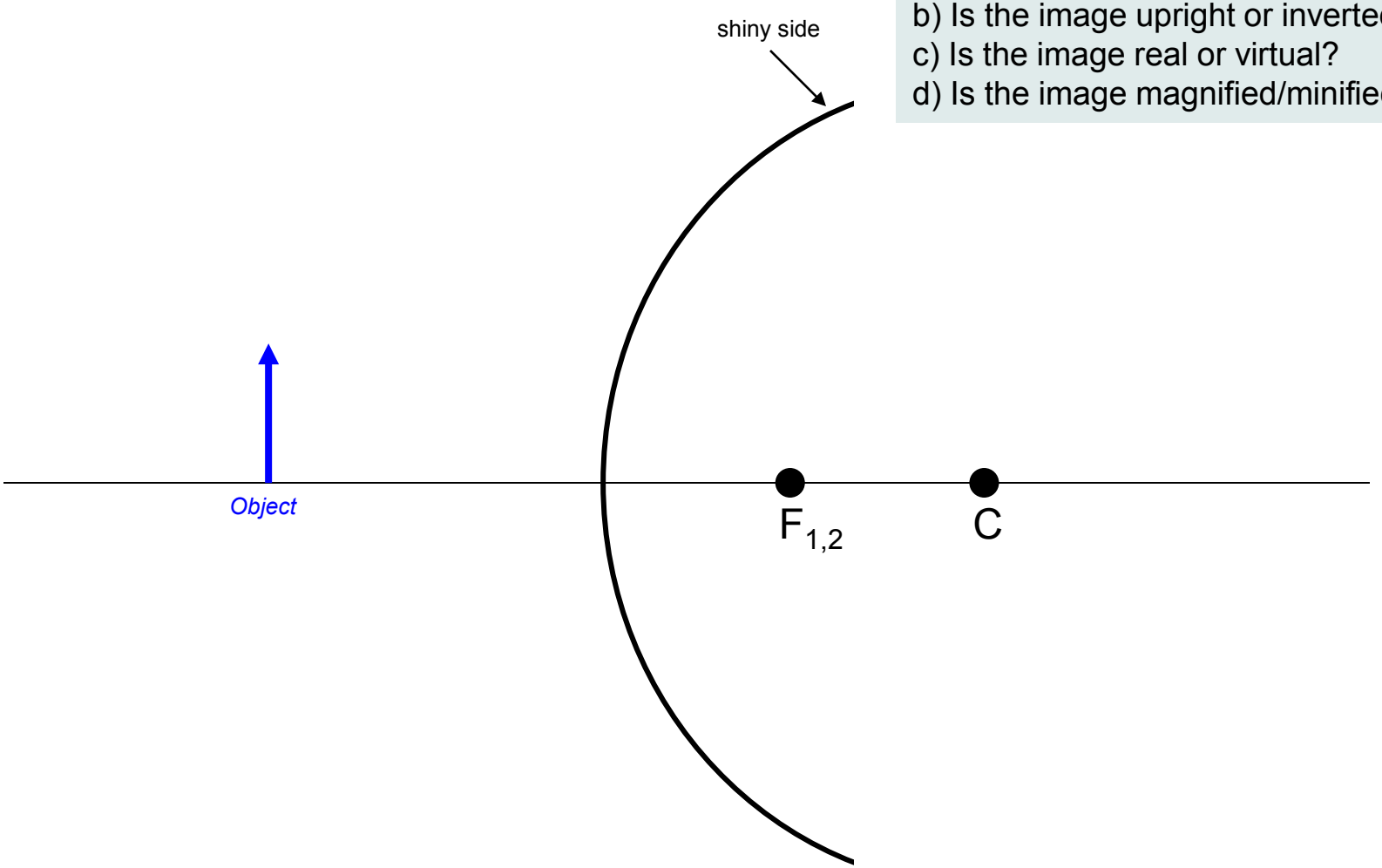

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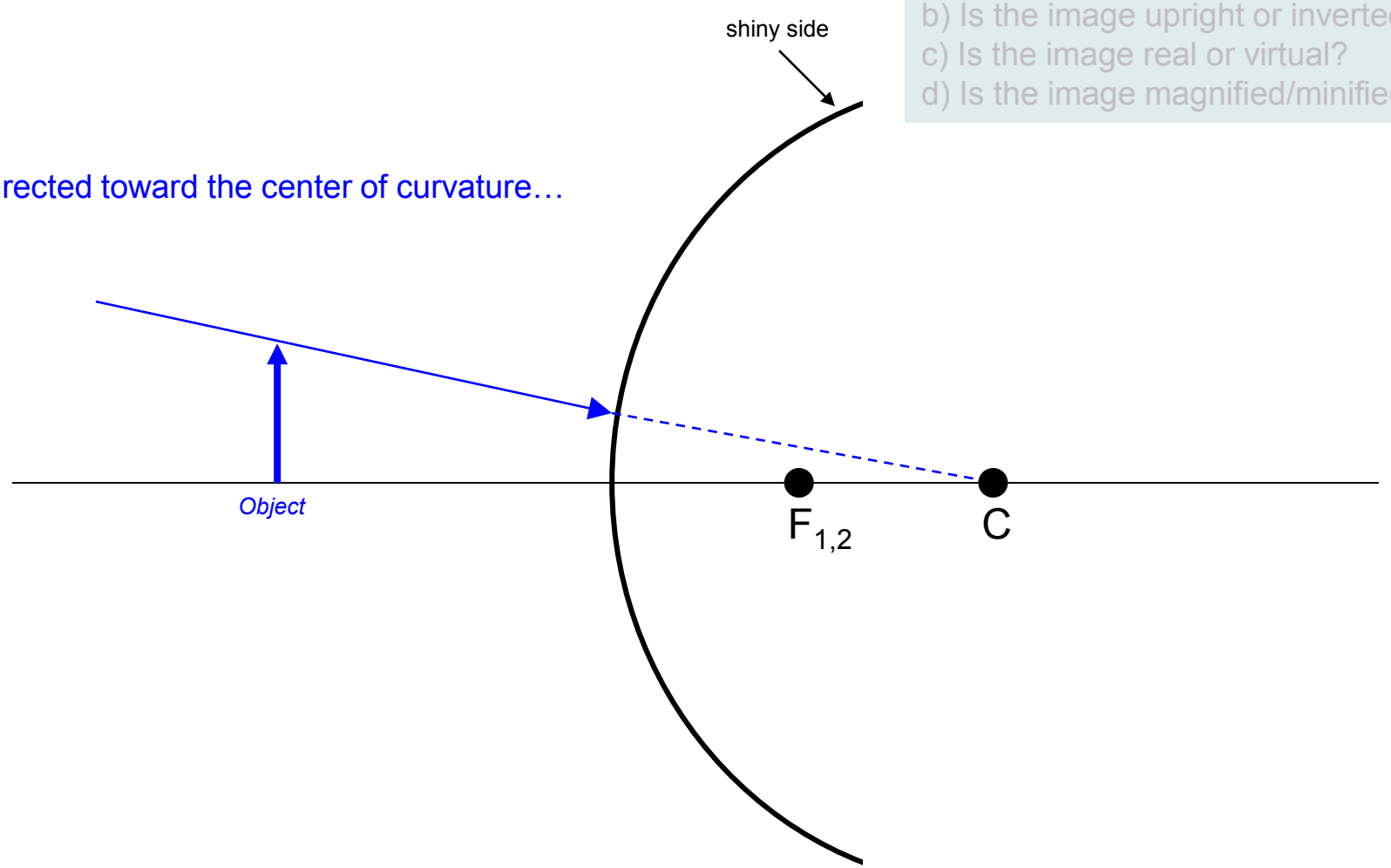
A ray directed toward the center of curvature…



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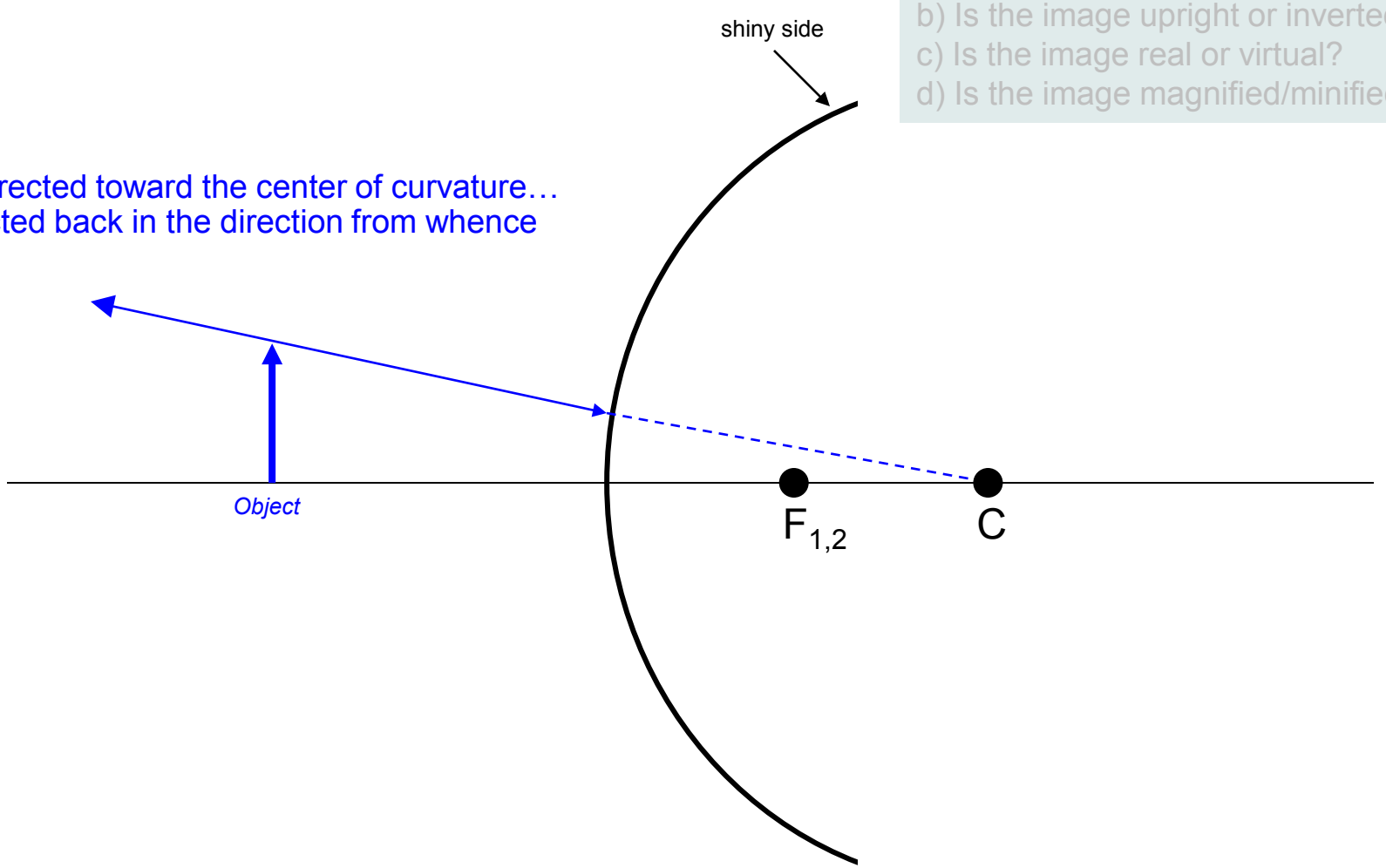
A ray directed toward the center of curvature… is reflected back in the direction from whence it came.



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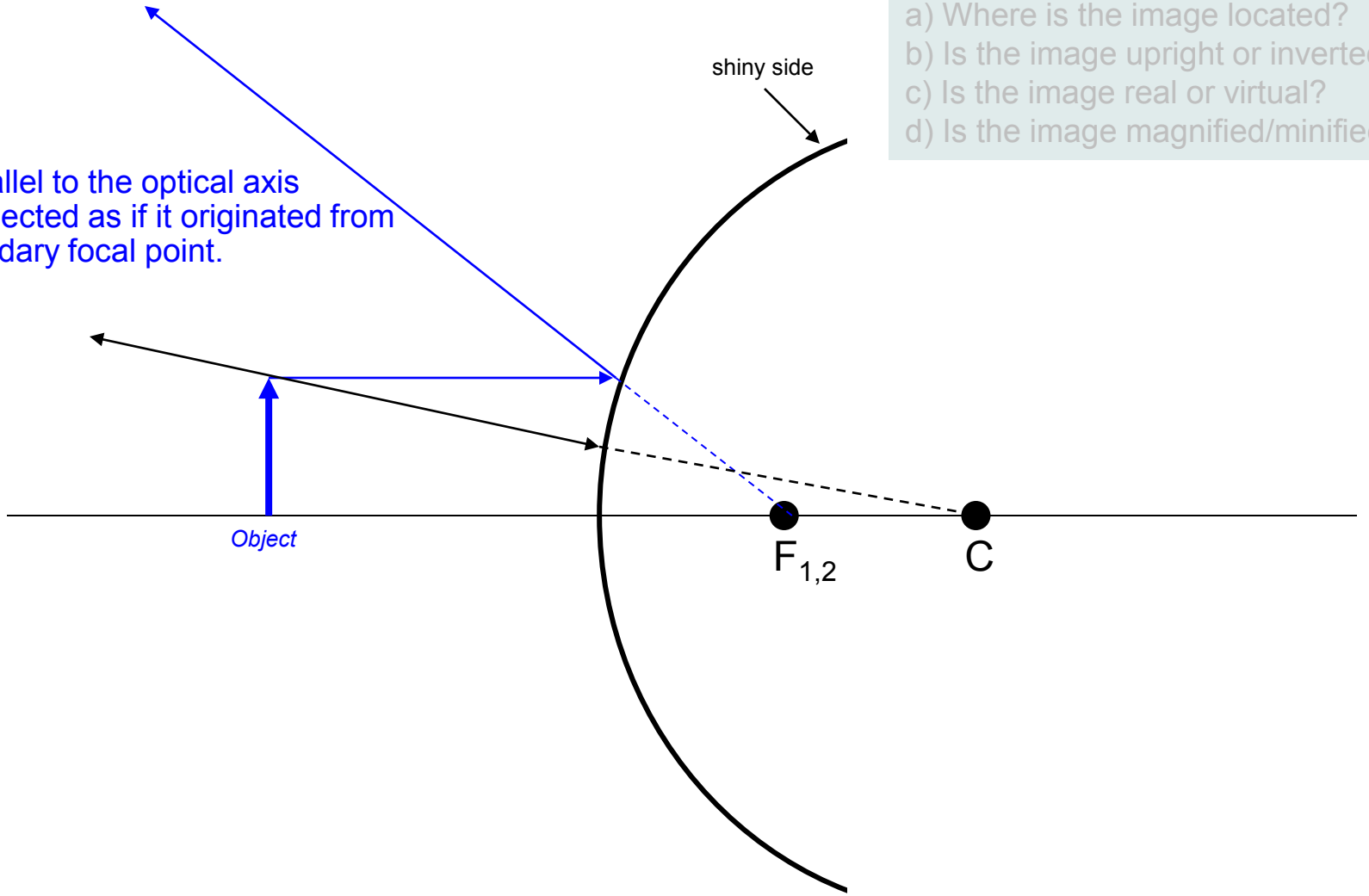
A ray parallel to the optical axis will be reflected as if it originated from the secondary focal point.



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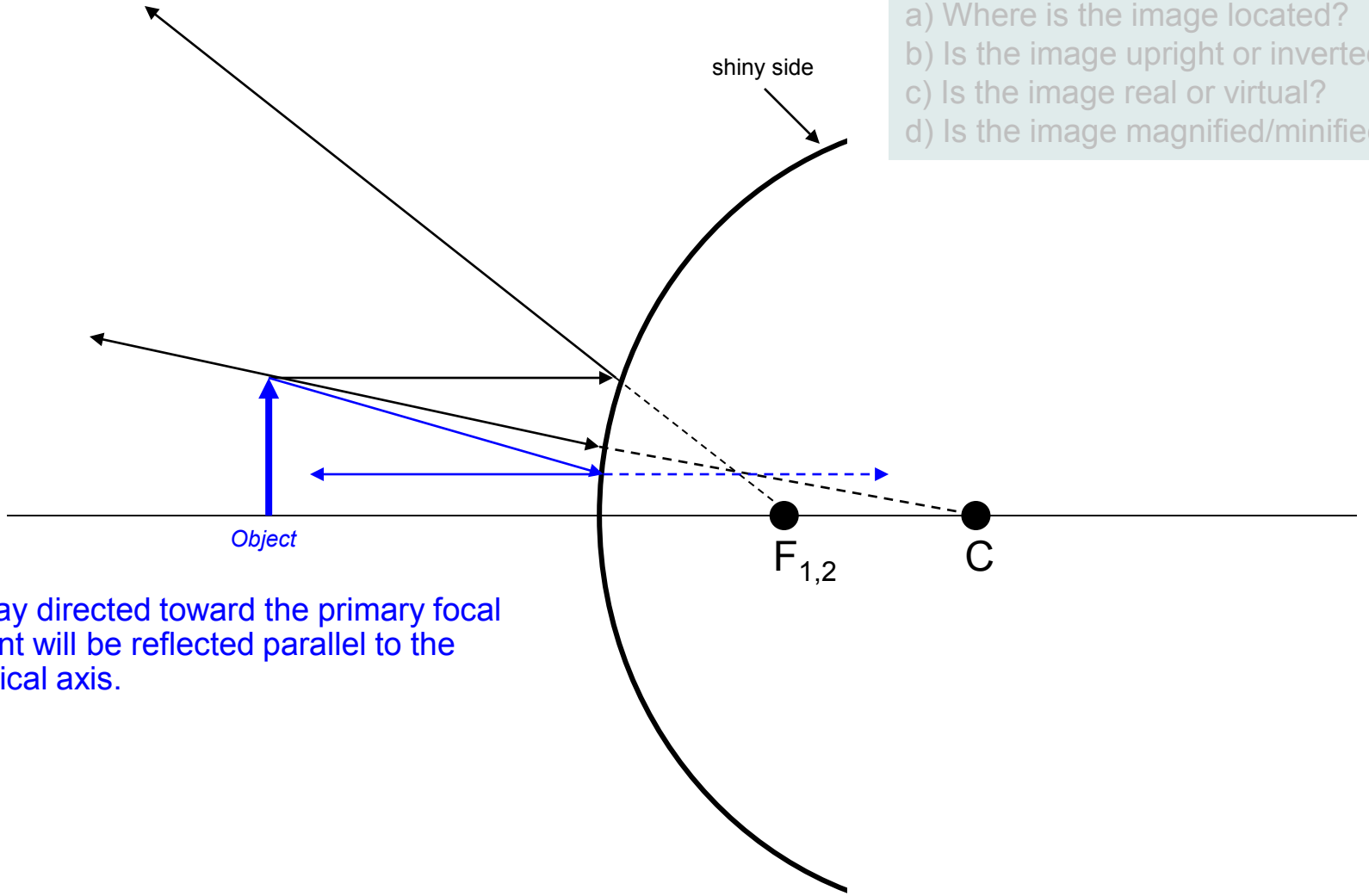

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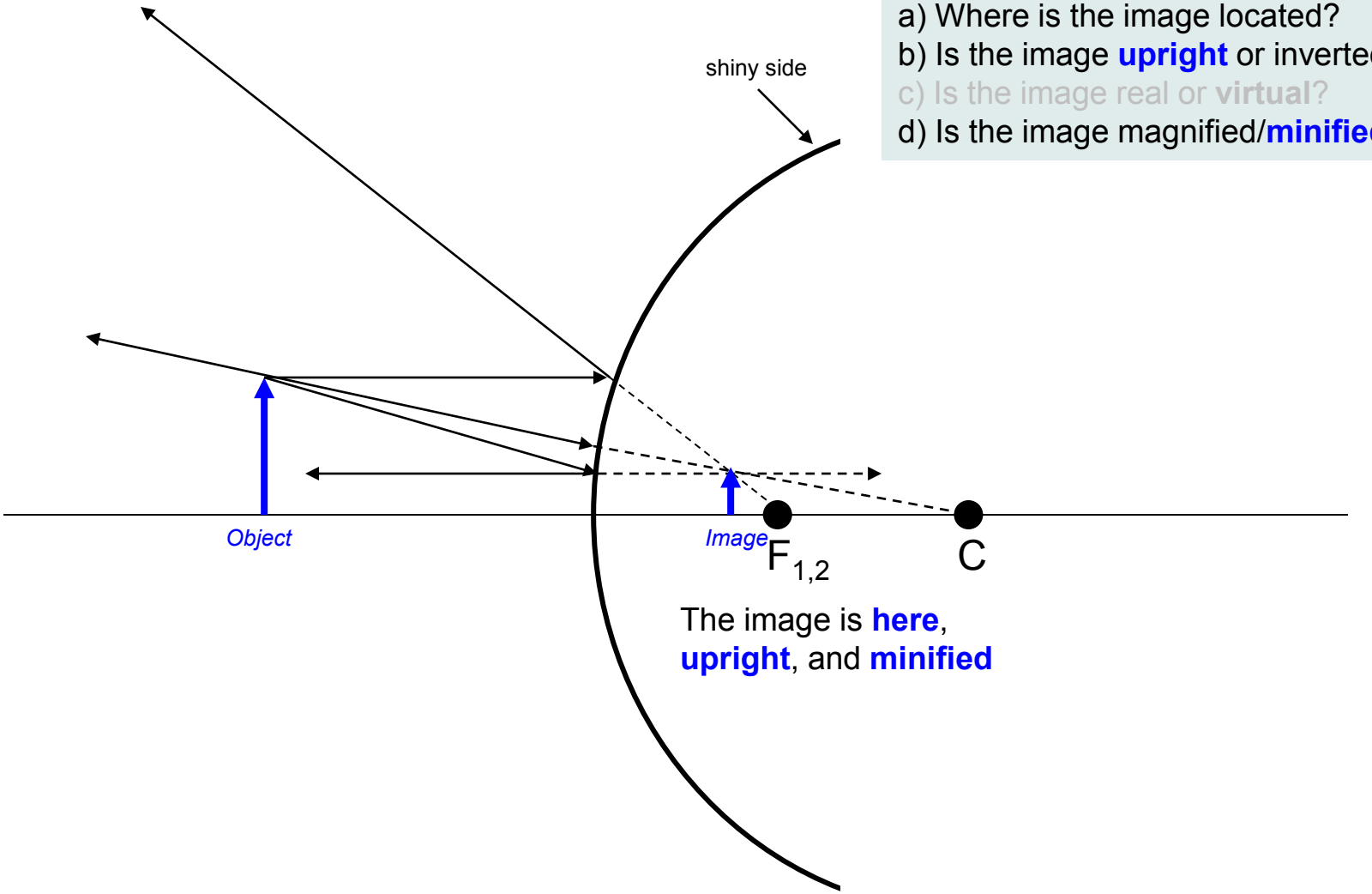

The image is **here**, **upright**, and **minified**

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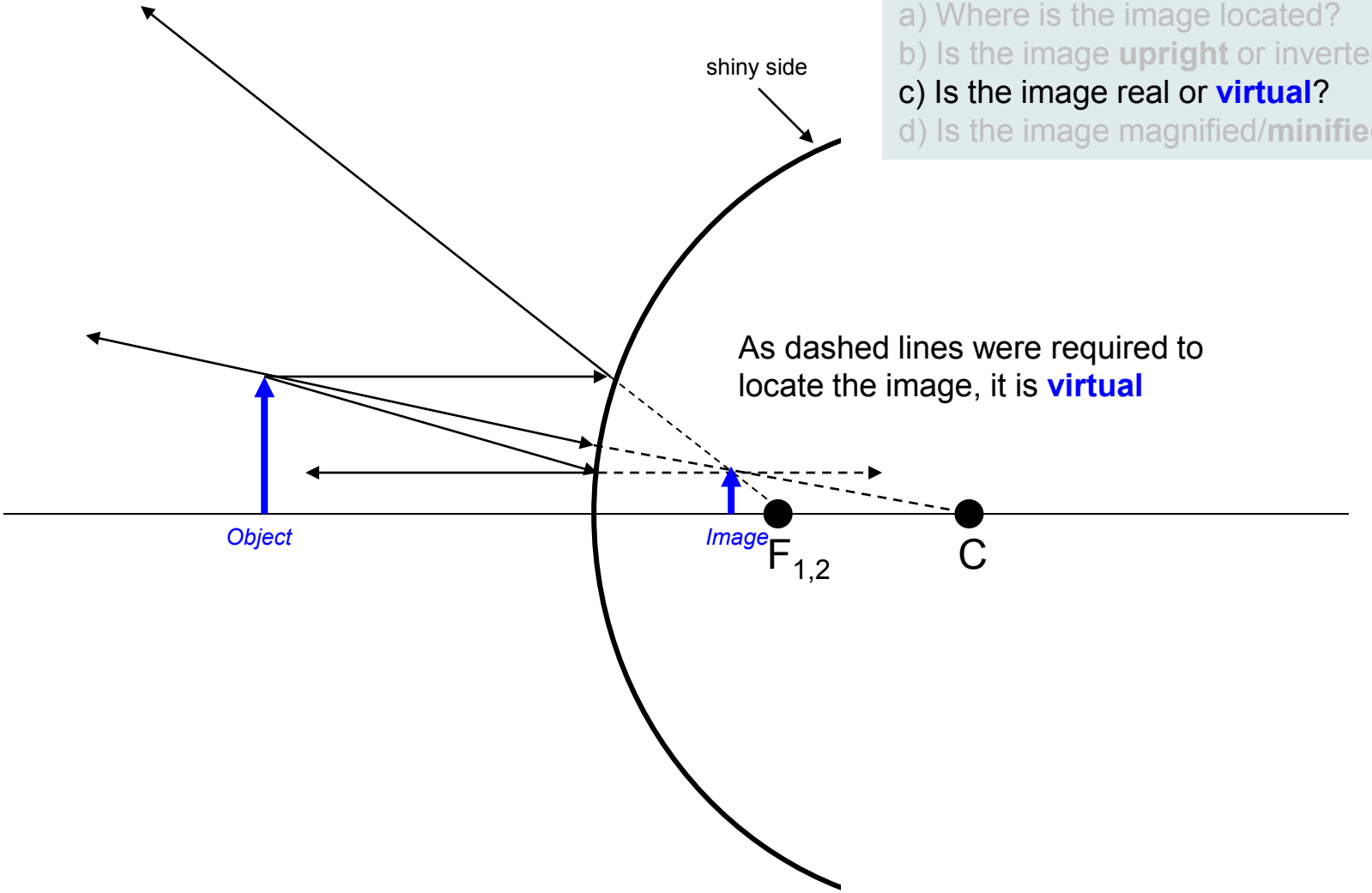

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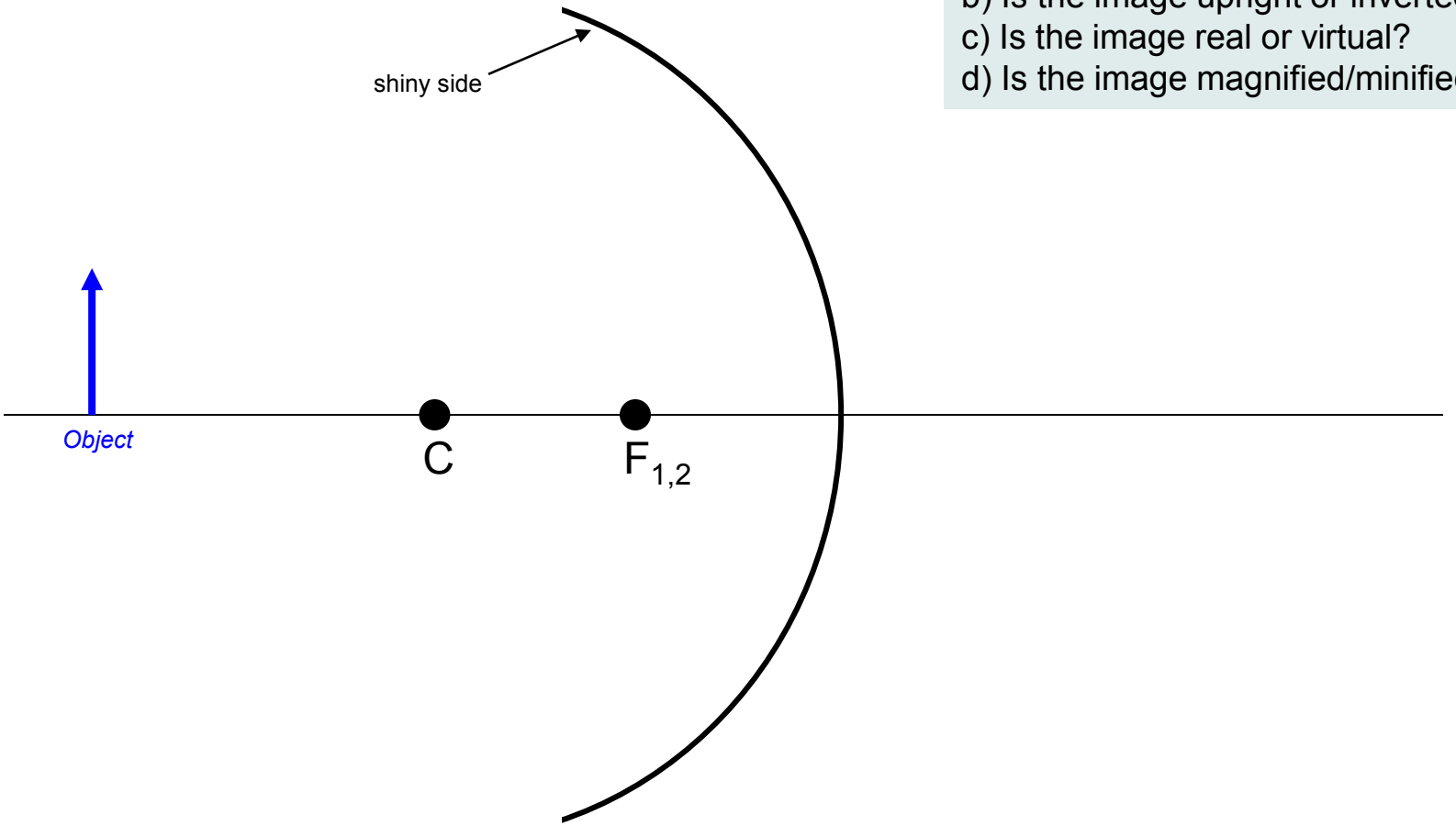

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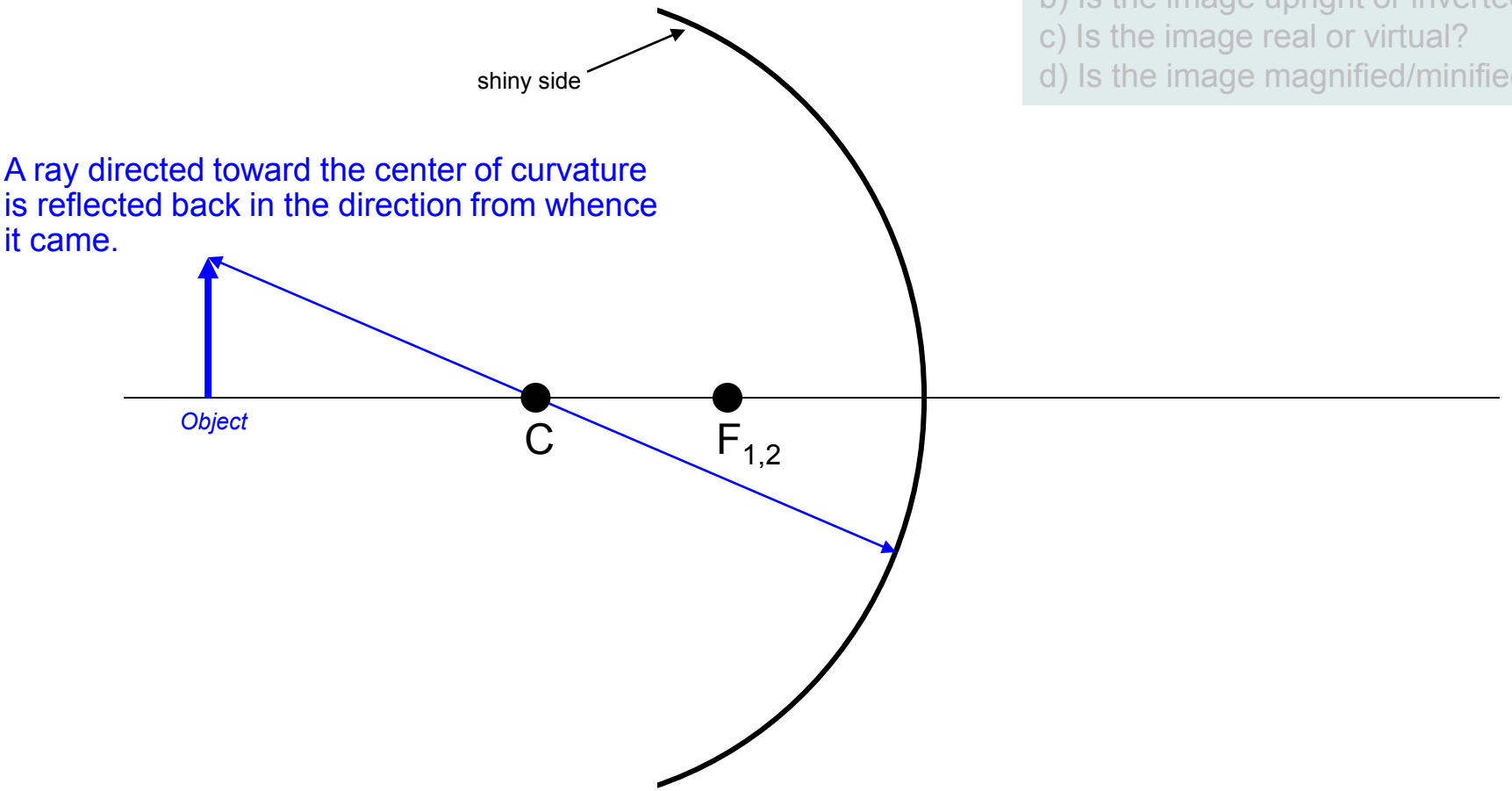

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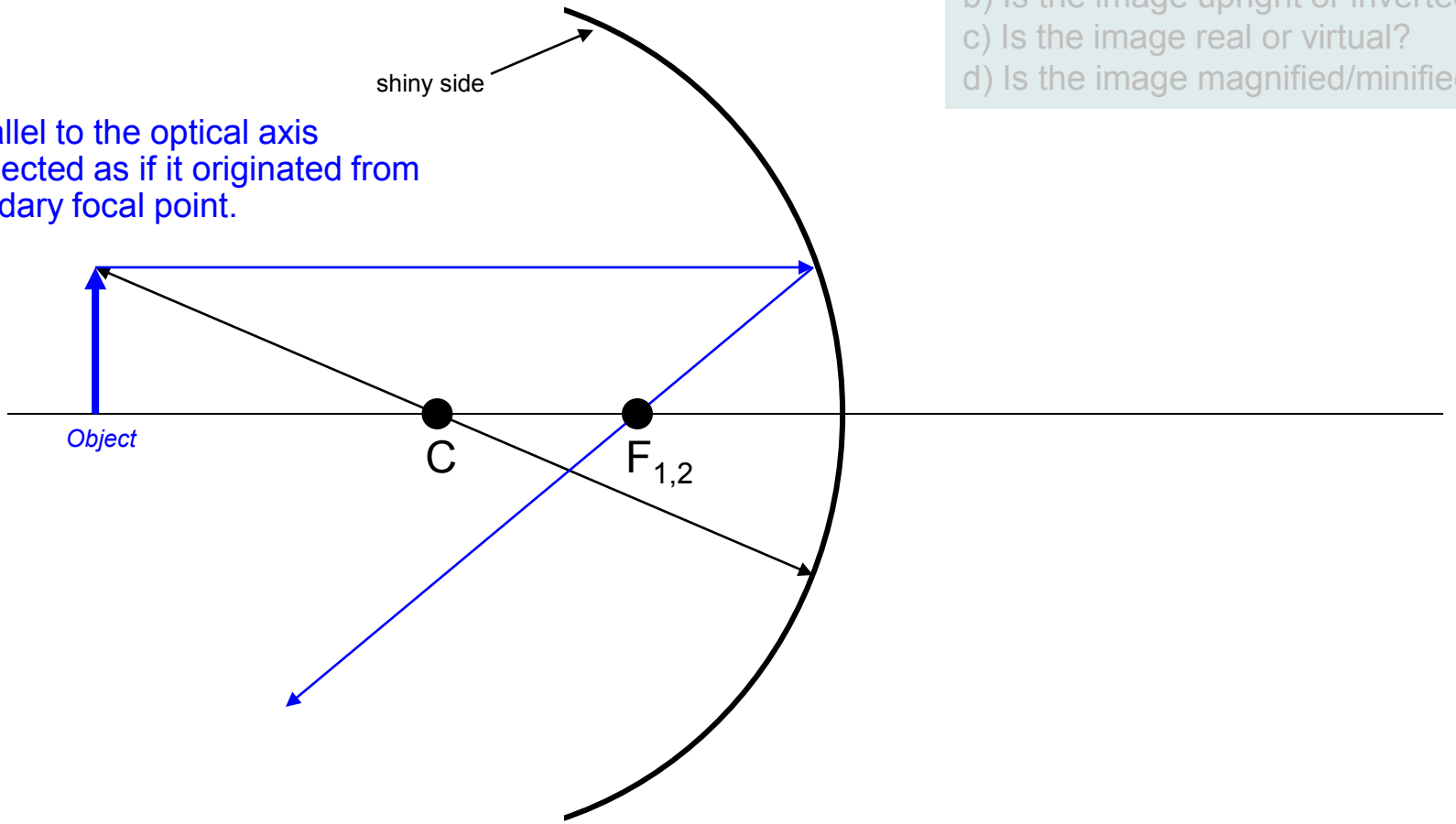

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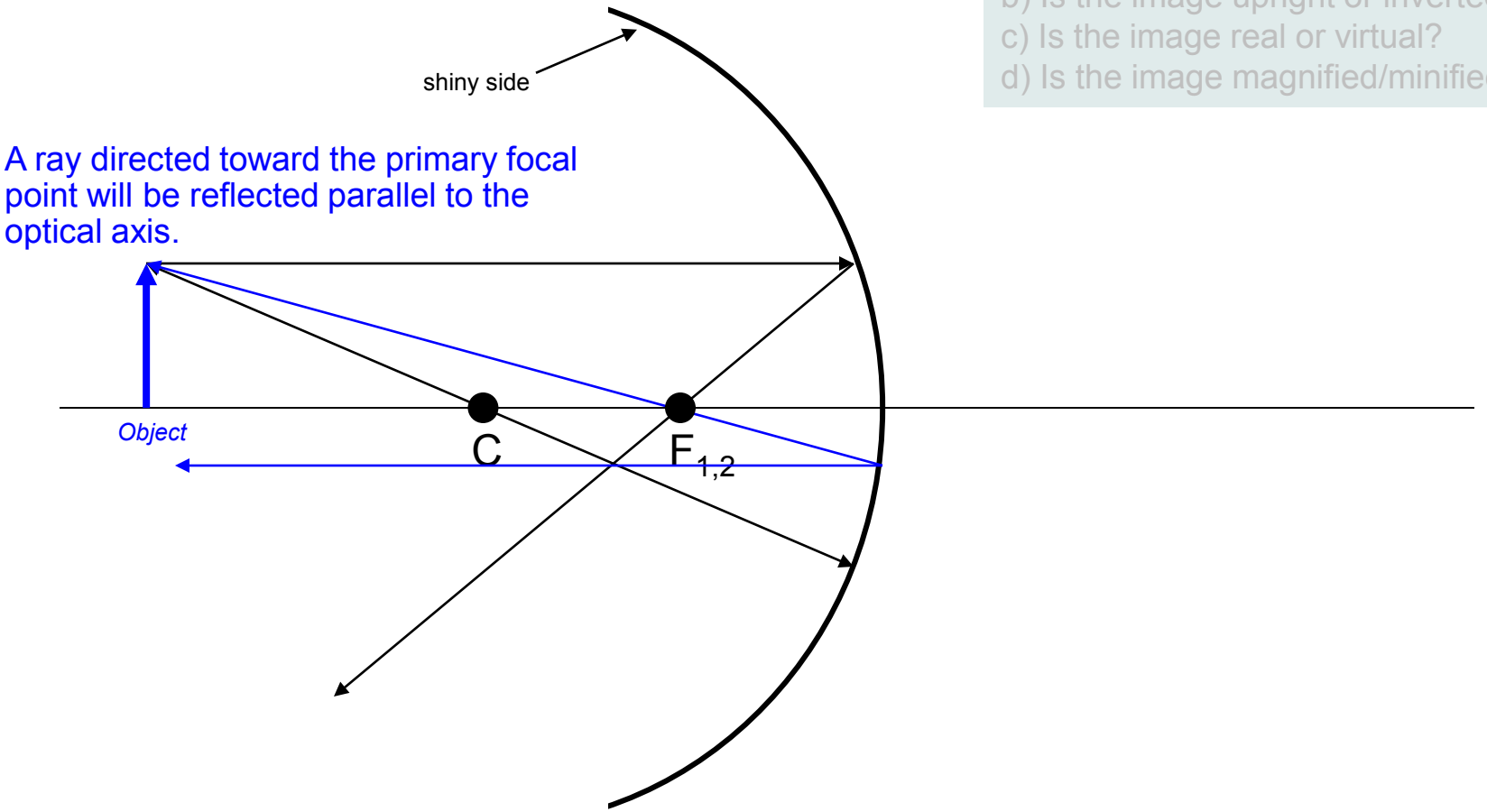

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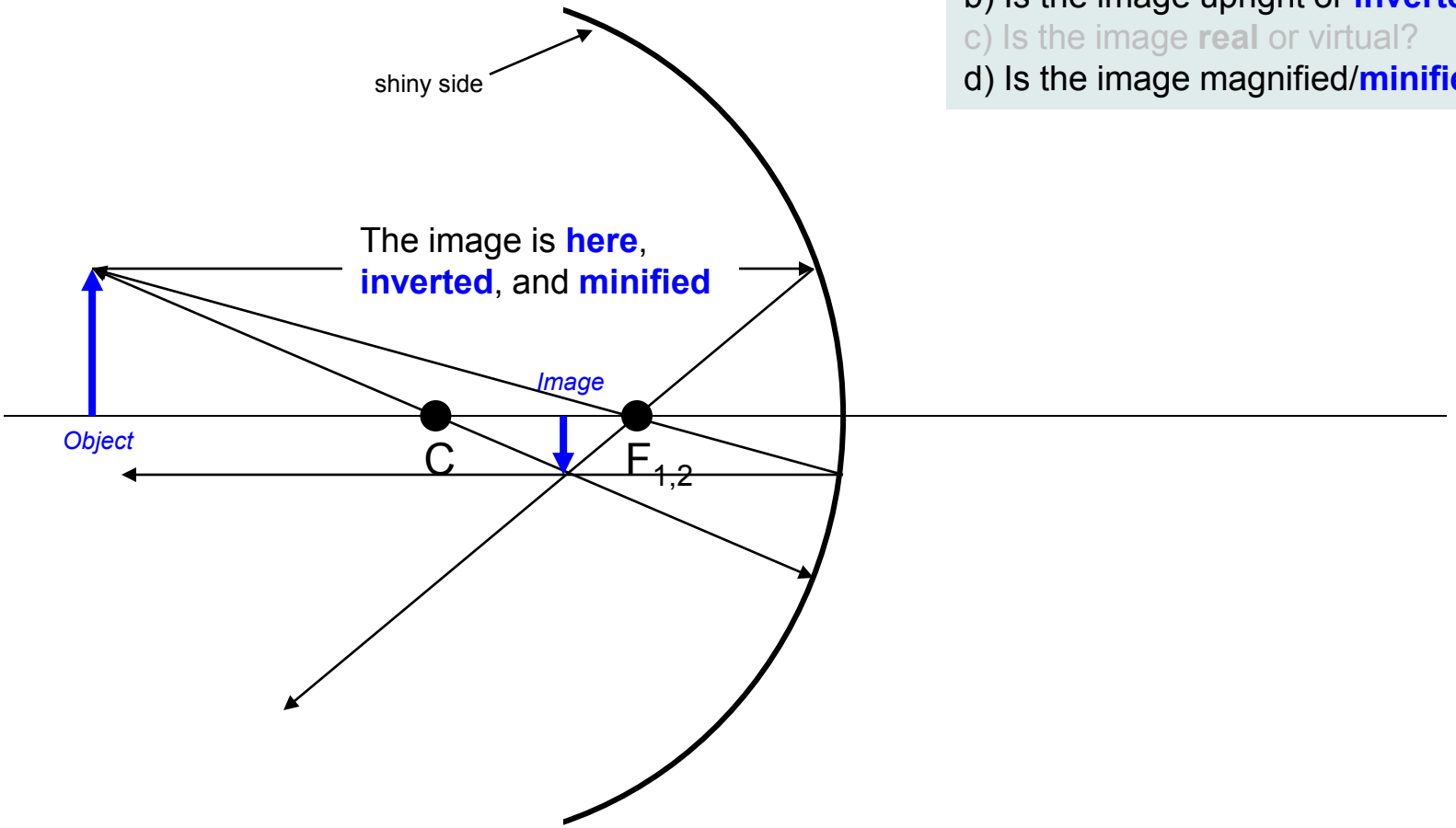

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