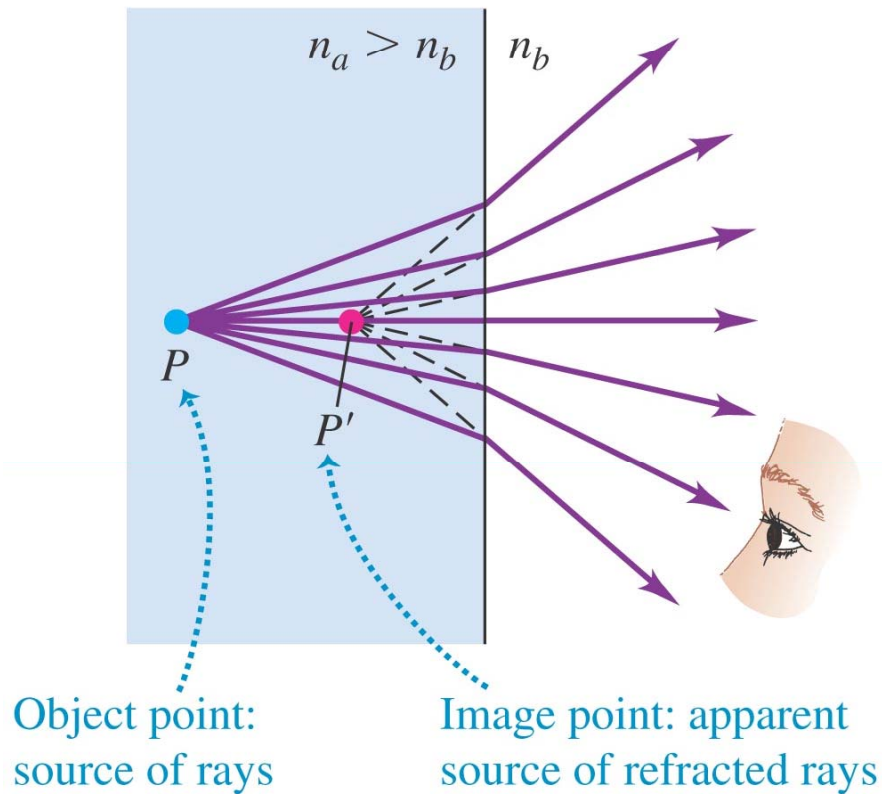
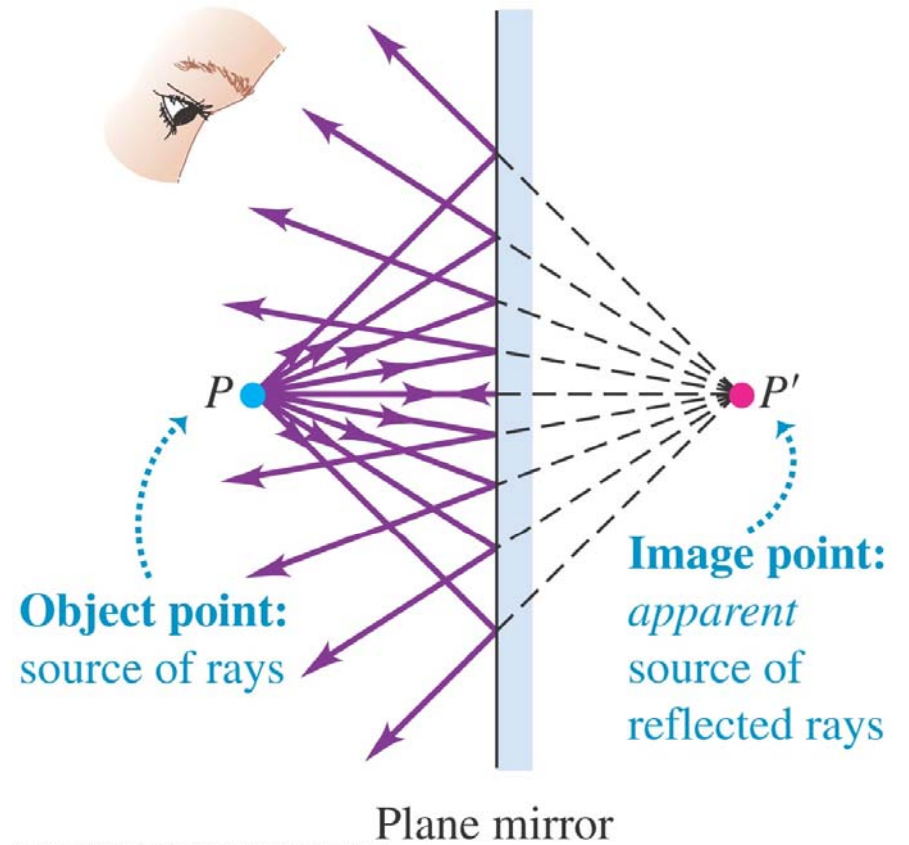


When $n_a > n_b$, P' is closer to the surface than P ; for $n_a < n_b$, the reverse is true.



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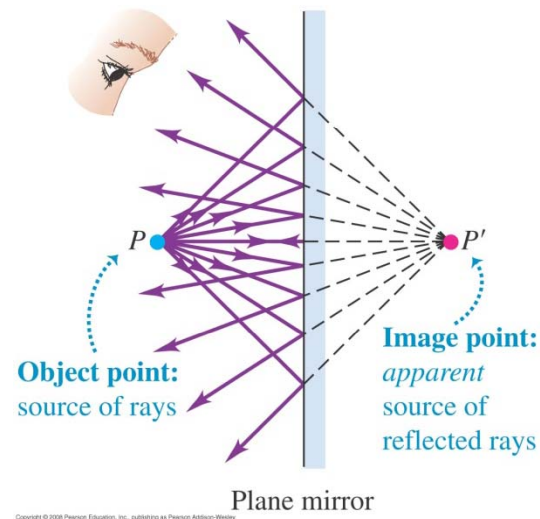
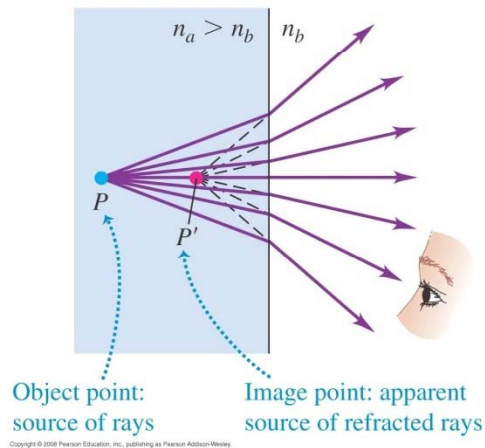
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Q34.5



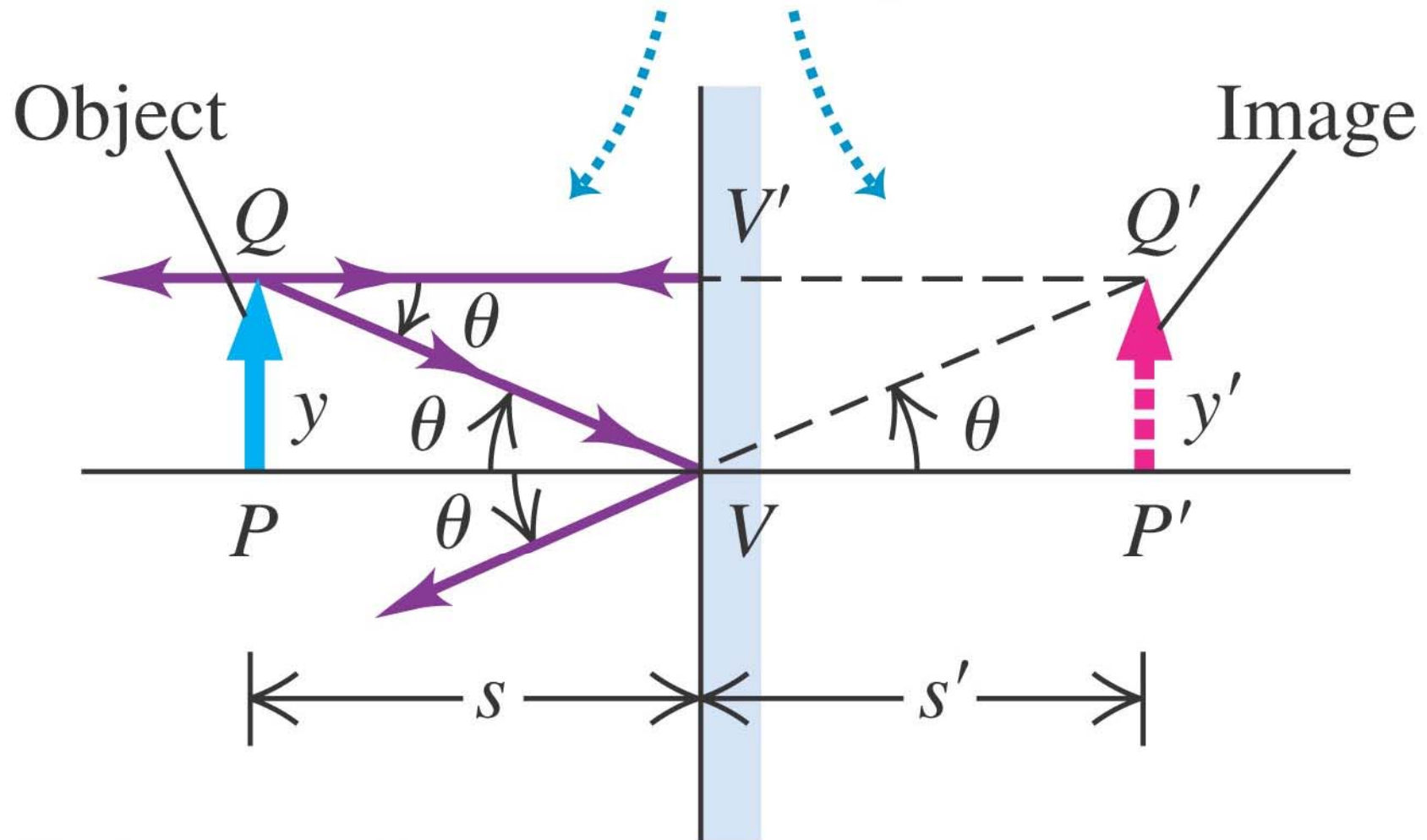
For the two examples, is the image real or virtual?

When $n_a > n_b$, P' is closer to the surface than P ; for $n_a < n_b$, the reverse is true.



- A. real in both cases
- B. virtual in both cases
- C. real for the water and virtual for the mirror
- D. virtual for the water and real for the mirror

For a plane mirror, PQV and $P'Q'V$ are congruent, so $y = y'$ and the object and image are the same size (the lateral magnification is 1).



An image made by a plane mirror is reversed back to front: the image thumb $P'R'$ and object thumb PR point in opposite directions (toward each other).

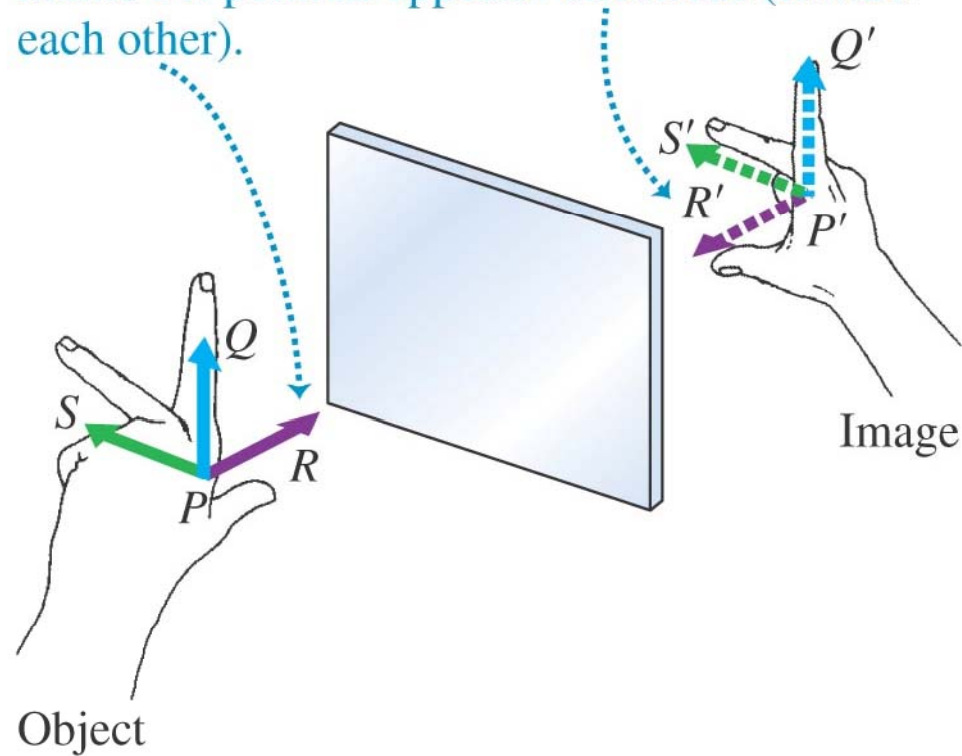
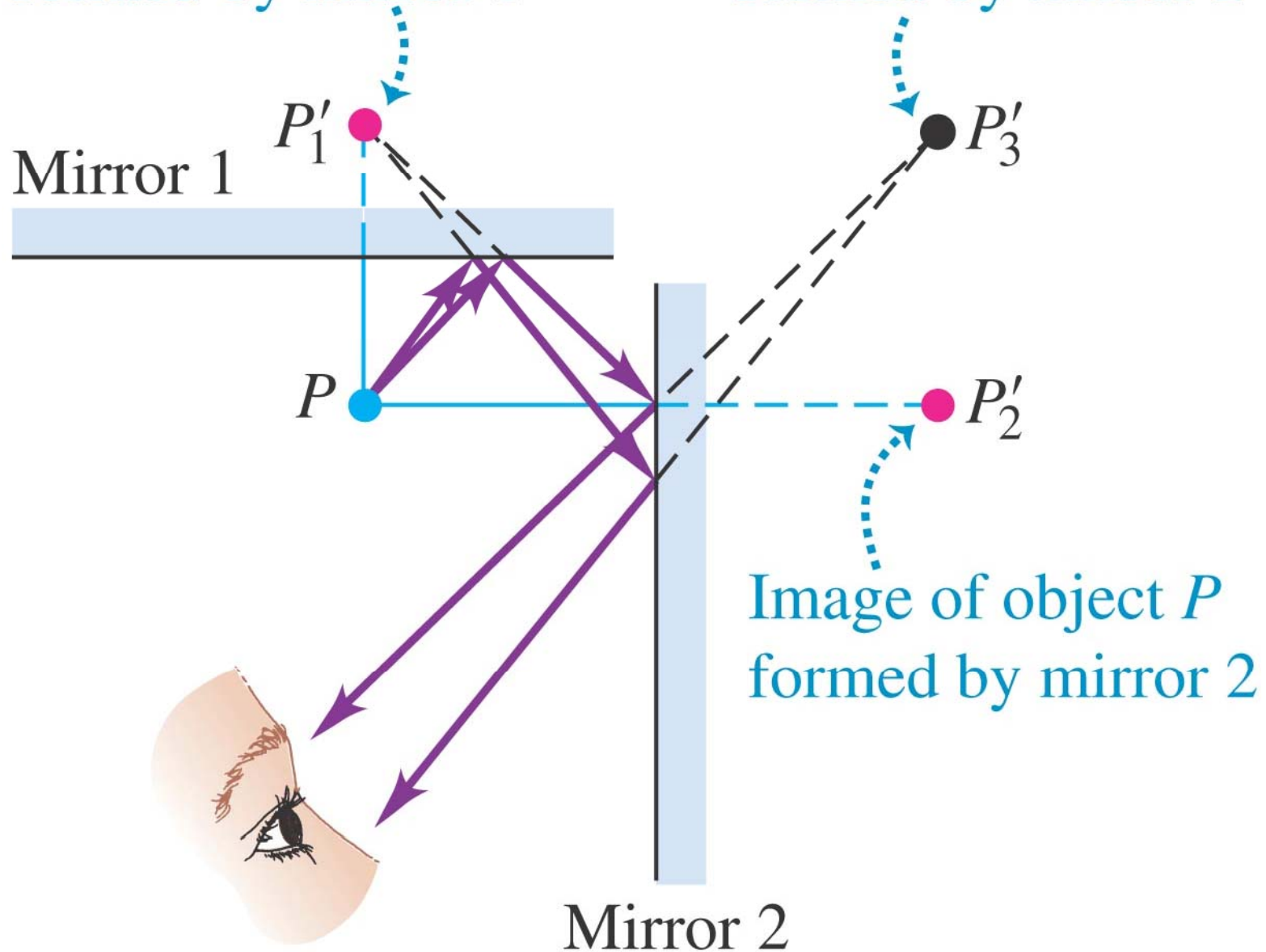


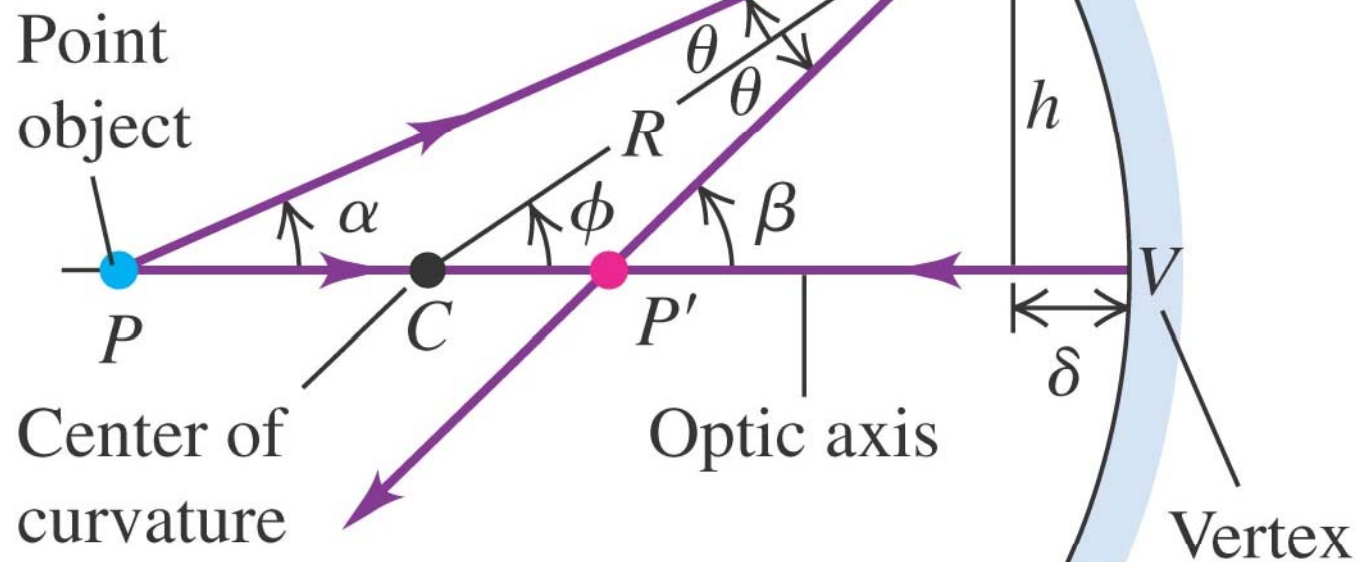
Image of object P
formed by mirror 1

Image of *image* P'_1
formed by mirror 2

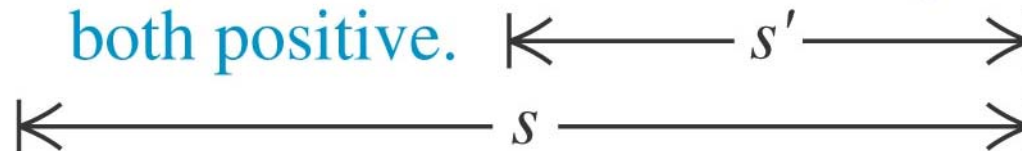


(a) Construction for finding the position P' of an image formed by a concave spherical mirror

For a spherical mirror,
 $\alpha + \beta = 2\phi$.

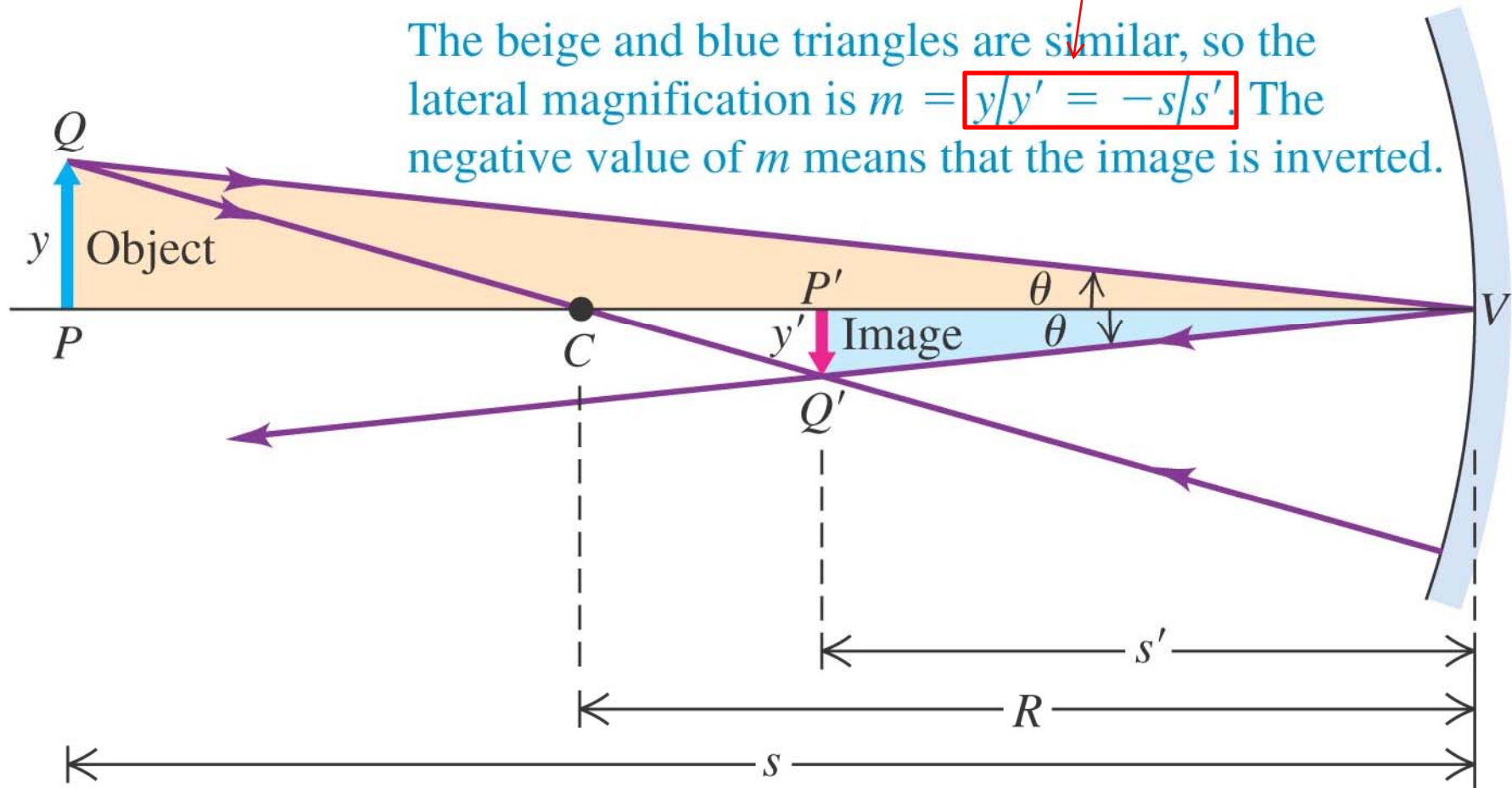


s and s' are
both positive.

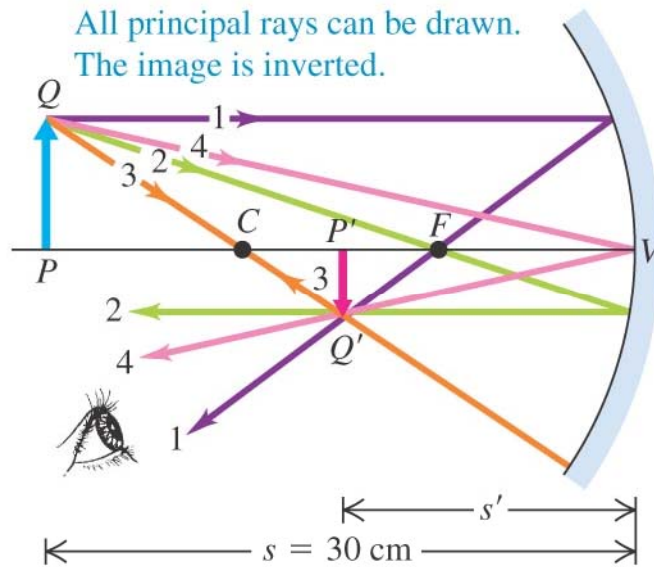


Note typo in book!

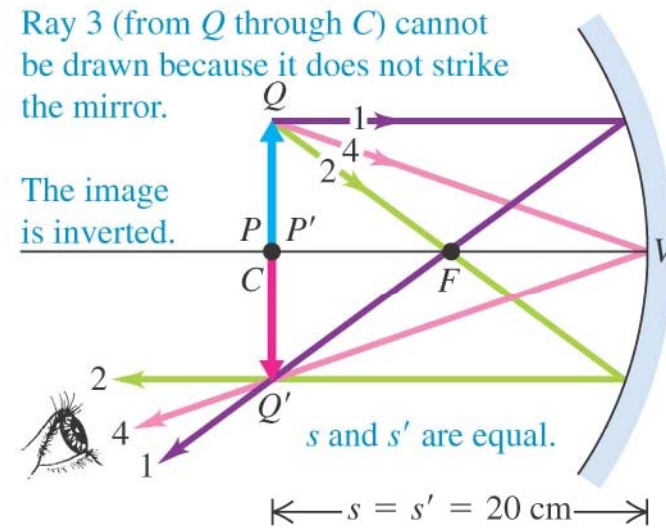
The beige and blue triangles are similar, so the lateral magnification is $m = y/y' = -s/s'$. The negative value of m means that the image is inverted.



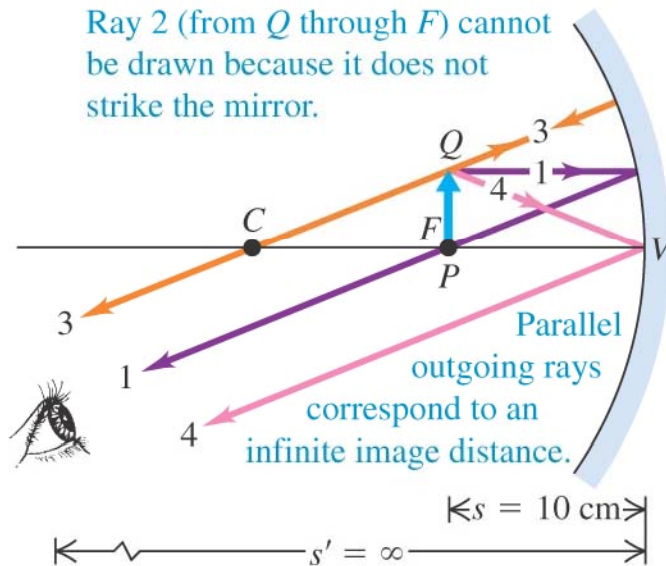
(a) Construction for $s = 30 \text{ cm}$



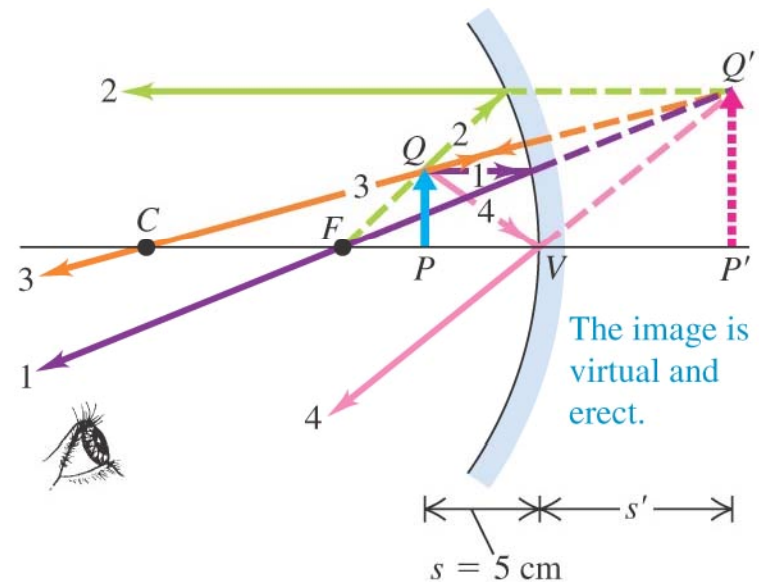
(b) Construction for $s = 20 \text{ cm}$



(c) Construction for $s = 10 \text{ cm}$



(d) Construction for $s = 5 \text{ cm}$



Q34.6



An object is placed 0.5 m away from a concave mirror of focal length +1.0 m. The image formed by the mirror is

- A. real and larger than the object.
- B. real and smaller than the object.
- C. real and the same size as the object.
- D. virtual and larger than the object.
- E. virtual and smaller than the object.

