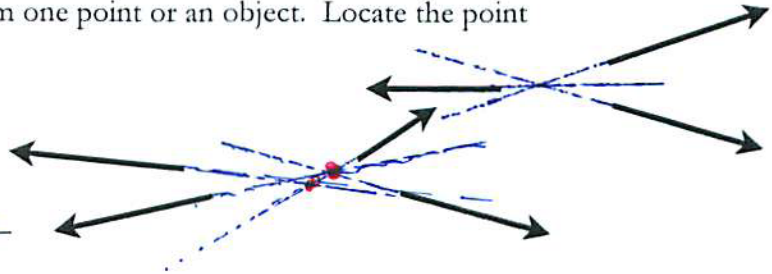


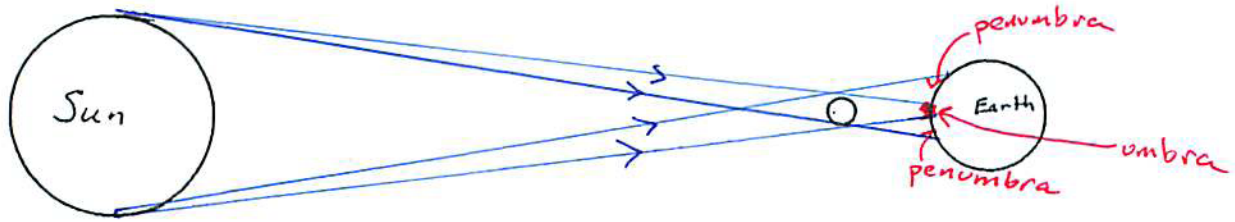
Use a straight edge for ALL rays!

1. The three rays of light shown come from one point or an object. Locate the point using apparent rays.

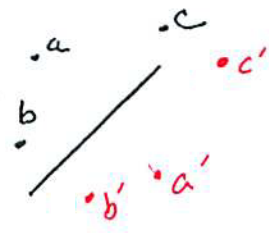


2. What is the minimum number of point sources of light which could have produced the four rays shown? 2

3. The sketch represents an eclipse of the sun. Sketch carefully the shadow cast by the moon on the earth, indicating umbra and penumbra.



4. Three objects are in front of a plane mirror as shown. Indicate their images by the letters a', b', c'. (Note: C is deliberately not in front of the mirror - does it have an image?) yes



5. A girl stands at point P near a mirror.

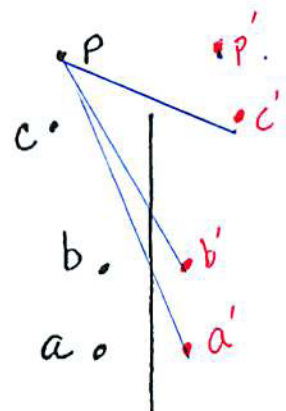
Can she see herself in the mirror? No

a. Can she see point a'? yes

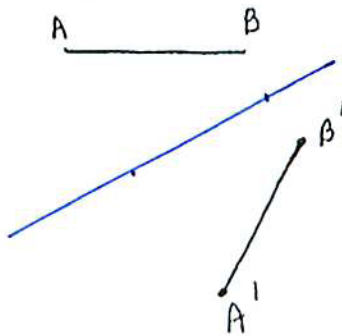
b. Can she see point b'? yes

c. Can she see point c'? No

(show in the diagram, where the images are. Label them a', b', c', p')



6. Can A'B' be the image of AB in any plane mirror? If you think not, write a short statement justifying your answer. If you think the answer is yes, draw the mirror in the sketch in its proper orientation.




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