THE THIN LENS or MIRROR EQUATION

Purpose: To determine the relationship between the focal point (F), object distance(do ) and the distance of the image(di ) from the vertex of the mirror.

Procedure:

1. Setup the equipment
2. Record the location of the mirror.
3. Record the location of the candle.
4. Find the image using a recipe card. Move the paper towards or away from the mirror until the image is perfectly clear.
5. Record the location of the image.
6. Move the candle to a new location. [3-5 cm]
7. Record the new location
8. Record the new location of the image
9. Repeat 4 more times

Observations:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Mirror location | Candle location | Image location | Adjusted Candle location  (do) | Adjusted Image location  (di) |
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Calculation for determining relationship:

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| --- | --- | --- | --- |
| do  + di = F | do - di = F | do  x di = F | di / do = F |
| 1/do  x 1/di = F | 1/do  - 1/di = F | 1/do  + 1/di = F | 1/do  + 1/di = 1/F |

Using the above formulas determine which formula provides the most consistent focal length value (F)