**Mirror and Lens Online Lab** Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Go to <https://simbucket.com/lensesandmirrors/>

1- Click on the arrow and the button to make it say MIRROR:

2- Click Ray 1 ON and Ray 2 ON:



3-Move the object by dragging the arrow to the desired location. Fill in the chart accordingly:

**CONCAVE MIRROR**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Focal Length** | **Object Distance** | **Object Height** | **Image Distance** | **Image Height** | **Describe the Image:**  **Circle all that apply** |
| 20 cm | 70 cm | 15.5 cm |  |  | Real or Virtual or Neither  Inverted or Upright or Neither  Enlarged or Smaller or Same Size or Neither |
| Draw the ray diagram: | | | | | |
|  | | | | | |
| **Focal Length** | **Object Distance** | **Object Height** | **Image Distance** | **Image Height** | **Describe the Image:**  **Circle all that apply** |
| 20 cm | 40 cm | 15.5 cm |  |  | Real or Virtual or Neither  Inverted or Upright or Neither  Enlarged or Smaller or Same Size or Neither |
| Draw the ray diagram: | | | | | |
|  | | | | | |
| **Focal Length** | **Object Distance** | **Object Height** | **Image Distance** | **Image Height** | **Describe the Image:**  **Circle all that apply** |
| 20 cm | 30 cm | 15.5 cm |  |  | Real or Virtual or Neither  Inverted or Upright or Neither  Enlarged or Smaller or Same Size or Neither |
| Draw the ray diagram: | | | | | |
|  | | | | | |
| **Focal Length** | **Object Distance** | **Object Height** | **Image Distance** | **Image Height** | **Describe the Image:**  **Circle all that apply** |
| 20 cm | 20 cm | 15.5 cm |  |  | Real or Virtual or Neither  Inverted or Upright or Neither  Enlarged or Smaller or Same Size or Neither |
| Draw the ray diagram: | | | | | |
|  | | | | | |
| **Focal Length** | **Object Distance** | **Object Height** | **Image Distance** | **Image Height** | **Describe the Image:**  **Circle all that apply** |
| 20 cm | 6 cm | 15.5 cm |  |  | Real or Virtual or Neither  Inverted or Upright or Neither  Enlarged or Smaller or Same Size or Neither |
| Draw the ray diagram: | | | | | |

**CONVEX MIRROR**

**Drag the arrow to the right side of the mirror – this becomes a convex mirror.**

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| **Focal Length** | **Object Distance** | **Object Height** | **Image Distance** | **Image Height** | **Describe the Image:**  **Circle all that apply** |
| 20 cm | 20 cm | 15.5 cm |  |  | Real or Virtual or Neither  Inverted or Upright or Neither  Enlarged or Smaller or Same Size or Neither |
| Draw the ray diagram: | | | | | |
| **Focal Length** | **Object Distance** | **Object Height** | **Image Distance** | **Image Height** | **Describe the Image:**  **Circle all that apply** |
| 20 cm | 40 cm | 15.5 cm |  |  | Real or Virtual or Neither  Inverted or Upright or Neither  Enlarged or Smaller or Same Size or Neither |
| Draw the ray diagram: | | | | | |

**CONVERGING LENS**

1- Click on the arrow and the button to make it say LENS and CONVERGING:



2- Click Ray 1 ON and Ray 2 ON:



3-Move the object by dragging the arrow to the desired location. Fill in the chart accordingly:

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| --- | --- | --- | --- | --- | --- |
| **Focal Length** | **Object Distance** | **Object Height** | **Image Distance** | **Image Height** | **Describe the Image:**  **Circle all that apply** |
| 20 cm | 60 cm | 15.5 cm |  |  | Real or Virtual or Neither  Inverted or Upright or Neither  Enlarged or Smaller or Same Size or Neither |
| Draw the ray diagram: | | | | | |
| **Focal Length** | **Object Distance** | **Object Height** | **Image Distance** | **Image Height** | **Describe the Image:**  **Circle all that apply** |
| 20 cm | 40 cm | 15.5 cm |  |  | Real or Virtual or Neither  Inverted or Upright or Neither  Enlarged or Smaller or Same Size or Neither |
| Draw the ray diagram: | | | | | |
| **Focal Length** | **Object Distance** | **Object Height** | **Image Distance** | **Image Height** | **Describe the Image:**  **Circle all that apply** |
| 20 cm | 30 cm | 15.5 cm |  |  | Real or Virtual or Neither  Inverted or Upright or Neither  Enlarged or Smaller or Same Size or Neither |
| Draw the ray diagram: | | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Focal Length** | **Object Distance** | **Object Height** | **Image Distance** | **Image Height** | **Describe the Image:**  **Circle all that apply** |
| 20 cm | 20 cm | 15.5 cm |  |  | Real or Virtual or Neither  Inverted or Upright or Neither  Enlarged or Smaller or Same Size or Neither |
| Draw the ray diagram: | | | | | |
| **Focal Length** | **Object Distance** | **Object Height** | **Image Distance** | **Image Height** | **Describe the Image:**  **Circle all that apply** |
| 20 cm | 10 cm | 15.5 cm |  |  | Real or Virtual or Neither  Inverted or Upright or Neither  Enlarged or Smaller or Same Size or Neither |
| Draw the ray diagram: | | | | | |

**DIVERGING LENS**

1- Click on the arrow and the button to make it say LENS and DIVERGING:



2- Click Ray 1 ON and Ray 2 ON:



3-Move the object by dragging the arrow to the desired location. Fill in the chart accordingly:

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| --- | --- | --- | --- | --- | --- |
| **Focal Length** | **Object Distance** | **Object Height** | **Image Distance** | **Image Height** | **Describe the Image:**  **Circle all that apply** |
| 20 cm | 30 cm | 15.5 cm |  |  | Real or Virtual or Neither  Inverted or Upright or Neither  Enlarged or Smaller or Same Size or Neither |
| Draw the ray diagram: | | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Focal Length** | **Object Distance** | **Object Height** | **Image Distance** | **Image Height** | **Describe the Image:**  **Circle all that apply** |
| 20 cm | 20 cm | 15.5 cm |  |  | Real or Virtual or Neither  Inverted or Upright or Neither  Enlarged or Smaller or Same Size or Neither |
| Draw the ray diagram: | | | | | |

**Questions:**

**1. What type of mirror produces ONLY smaller, upright, virtual images?**

**2. Where would you find a CONVEX MIRROR?**

**3. What type of lens produces ONLY smaller, upright, virtual images?**

**4. What is an example of a CONCAVE MIRROR?**