Virtual Lenses Lab

Remember: this lab software can only be accessed from the computer lab (B201) and the first 8 computers in the library!!

Concave Lenses
- Load Light Lab #20
- Make sure a deep-curved concave lens is in the “tool holder”
- Place a red one-beamed laser behind the lens aimed at the targets.

1) When the red laser is turned on, move it up and down and circle the targets that you can hit when the light passes through the lens. (1 pt)

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<th>Top</th>
<th>Second</th>
<th>Middle</th>
<th>Fourth</th>
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2) Replace the deep-curved concave lens with a shallow-curved concave lens, then circle the targets below that you can hit when the red light passes through the lens: (1 pt)

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3) Do the concave lenses you tested have a focal point? Explain how you figured this out using the virtual lab software. (2 pts)

Convex Lenses
- Load Light Lab #22
- Make sure a deep-curved convex lens is in the “tool holder”
- Place a blue one-beamed laser behind the lens aimed at the targets.

1) When the blue laser is turned on, move it up and down and circle the targets that you can hit when the light passes through the lens: (1 pt)

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2) Replace the deep-curved convex lens with a shallow-curved convex lens, then circle the targets below that you can hit when the blue light passes through the lens: (1 pt)

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3) Remove the barrier from the green laser at the top of the screen and center the deep-curved convex lens in front of the lasers beams. How many “squares” is it to the focal point? (1 pt) ______________

4) Replace the deep-curved convex with the shallow-curved convex lens in front of the green laser. How many “squares” is it to the focal point? (1 pt) ______________

5) When comparing the two lenses, which one refracts light more and how could you tell? (1 pt)
Correcting Vision With Lenses
- Load Light Lab #24
- In this lab the red laser represents the retina of our eye where the light should focus for us to see correctly and the lenses represent the natural lenses that occur in everyone’s eyes. DO NOT move the lenses that are loaded with this lab when answering the questions below!

1) Which of the lens and light combinations would represent a person with perfect vision? (1 pt)
   Top                     Middle                     Bottom

2) Which of the lens and light combinations would represent a person who is farsighted? (1 pt)
   Top                     Middle                     Bottom

3) Which of the lens and light combinations would represent a person who is nearsighted? (1 pt)
   Top                     Middle                     Bottom

4) For the farsighted person, choose a lens that you can place between the light source and the original lens to correct their vision and create your sketch below: (1 pt)

5) For the nearsighted person, choose a lens that you can place between the light source and the original lens to correct their vision and create your sketch below: (1 pt)

Obstacle Course
- Load Light Lab #21
- When the lab loads, you must use your knowledge of lenses and mirrors to hit each of the “targets” with the light waves.
- When successful, draw a sketch of what you did to hit the target and label the types of lenses or mirrors you used. (2 pts each drawing)

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DO NOT DO THIS ONE!!!