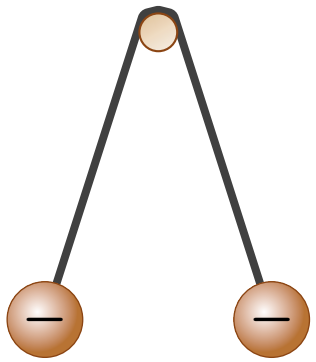
Warm Up Question 1

Calcium and barium are atoms that are prominent trapped-ion quantum computing devices. In these, neutral atoms are ionized by removing a single electron; the resulting ion is called singly ionized. Calcium has 20 protons and barium has 56 protons. How does the charge of singly ionized calcium compare to that of single ionized barium? Explain your answer.

1. Larger for barium. It has more protons.
2. More negative for barium. It has more electrons.
3. Same. Each has exactly one more proton than electron.

Question 1

Two negatively charged metal balls are connected by a metal wire and suspended over a wooden (insulating) peg as illustrated.



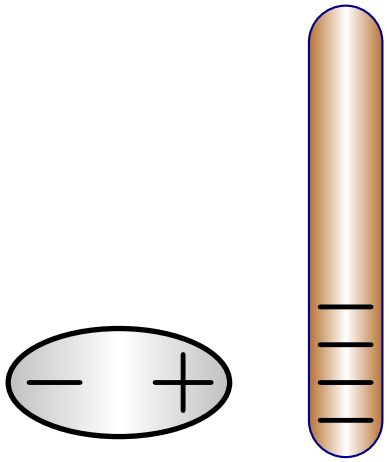
A rod is brought near to but not touching the peg and it is observed that the separation of the balls increases.

Which of the following best describes the rod?

1. The rod is positively charged.
2. The rod is negatively charged.
3. The rod is uncharged.
4. The rod is magic.

Question 2

A negatively charged rod is held near to a neutral oval object, which becomes polarized as illustrated.



Which of the following is true about the forces exerted by the rod on the oval object?

1. The force on the right edge (of the oval) is the same as that on the left edge (of the oval) since the charges at the edges are the same.
2. The force on the right edge is larger than as that on the left edge.
3. The force on the right edge is smaller than as that on the left edge.

Warm Up Question 2

Go to the Phys 132 course website (not D2L). Look in the navigation bar on the left or at the top and click "Course Materials." This will open a new page with a day-by-day listing of the course activities. Click on the link for the "Slides 1" on January 20. You should see the quiz questions that were covered in the class and one more (Question 3) at the very end that was not covered in class. Now answer that last question.

1. Response
2. Response