

Name: _____ ID: _____

1. Write down inequalities that describe the solid upper hemisphere of the sphere of radius 2 centered at the origin.

It may help to visualize the situation. Take an orange and cut it in half. Take half of the orange, and set it face down on a plate. Your task is to describe all of the points in this half of the orange.

2. Let $\mathbf{a} = \langle 4, 0, 3 \rangle$ and $\mathbf{b} = \langle -2, 1, 5 \rangle$.

(a) Compute $\mathbf{a} + \mathbf{b}$.

(b) Compute $\mathbf{a} - \mathbf{b}$.

(c) Compute $3\mathbf{b}$.

(d) Compute $2\mathbf{a} + 5\mathbf{b}$.