Cell Lab

Step 1: Measure the diameter of the cells in Panels 1, 4, and 6 in *μm*, using the scale bar as a guide. The diameter is simply the distance from one end of the cell to the opposite end. In Panels 4 and 6, just measure one cell; we'll assume they are roughly the same size. If a cell is more oval-shaped than spherical, measure along the longer axis.

Panel	Diameter in μm	Radius (r) in μm	SA	V	SA/V
1					
4					
6					

Step 2: Determining the radius of the cells
We will assume that these cells are perfect spheres.
The radius is defined as the distance from the center of the sphere to the edge.
This can be figured out easily by simply dividing the diameter in half.

Step 3: Determining surface area
Surface area (SA) can be calculated using this formula: $SA = 4\pi r^2$
Calculate the SA for each of your three cells and record it in column 3.

Step 4: Determining volume
Volume (V) can be calculated using this formula: $V = (4/3)\pi r^3$
Calculate the V for each of your three cells and record it in column 4.

Step 5: Determining SA/V ratios
Once you have determined the SA and V, it's relatively easy to figure out the ratio.
Simply divide SA (column 3) by V (column 4). Record the ratios in column 5

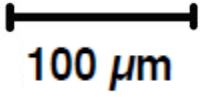
Use the data from the table to answer the following questions:

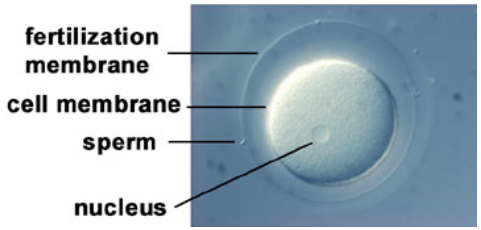
Which panel shows cells with the highest SA/V ratio?_____

Which panel shows cells with the lowest SA/V ratio?_____

What happens to the SA/V ratios of these embryonic cells over time (from 0-105 min)?

_____





Microscopes:

Include at least two sketches from the microscopes in your lab notebook.
Include the specimen name and the magnification (red = 40×, yellow = 100×, blue = 400×).