Microscope Calculations Practice:

1. Calculate the diameter of the Field of View (FOV) on low power for each diagram which shows the lines of a ruler. Pretend the distance between all lines is 1.0 mm. Objects in the field of view are usually measured in micrometers (um) To convert, a field of view of 0.8mm, times it by 1000 to get 800um. 0.8mm x 1000 = 800 um.



1. Estimate the size of each specimen assuming the FOV is 5.0 mm.
2. Determine the diameter of ONE onion cell shown using the following microscope drawing where the diameter of the field of view is 3.7 mm on low power.
3. A cell is observed to stretch half way across the high power field that has a Field of View of 0.2 mm. How long is the cell?
4. 15 cells are observed across the centre of the high power field of FOV 0.4mm. How long is each cell?
5. A student draws a cell diagram 24mm long. She writes 400x below the diagram. How large is the actual cell?
6. A cell is 80μm in length. If drawn 600 times actual size, how long will the drawing be in cm?
7. A cell is observed under high power to be about half the diameter of 0.4 mm. A student draws the cell 25cm in length. What is the magnification of the drawing?
8. A fine hair is estimated to be, in diameter, one tenth of the diameter of the high power field of 0.2mm. It is drawn 4cm wide by a student. What is the drawing magnification?
9. A paramecium is observed to travel across the low power field of 4 mm in five seconds. Calculate its speed in μm/s.
10. 5 onion cells are counted across the centre of the med power field of 2mm. One cell is drawn 16mm long. Calculate the drawing magnification.
11. 40 potato cells are counted across the centre of the low power field of view of 4mm. One cell is drawn 2cm long. What is the drawing magnification?