



Calculating Magnification

$$\text{magnification} = \frac{\text{size of image}}{\text{size of real object}}$$

Hint: always check the units; you may need to convert. Read the question carefully and make sure you understand what you are being asked to find; you may need to rearrange the equation.

Bronze	Silver	Gold
The image size of a cell is 2mm. The real size of the cell is 0.01mm. Calculate the magnification.	A cell with a length of 0.05mm is observed at $\times 200$ magnification. Calculate the size of the image. Give your answer in mm.	The nucleus of a cell viewed at $\times 500$ magnification has an image size of 2.4mm. Calculate the real size of nucleus. Give your answer in μm .
The image size of a bacterial cell viewed under a microscope is 10mm. The real size of a bacterial cell is 0.002mm. Calculate the magnification.	The tail of a sperm cell has a real length 50 μm . The tail of the sperm cell in an image is measured as 7.5mm. Calculate the magnification of the image.	A leaf cell is observed at $\times 400$ magnification. The size of the image is 2cm. Calculate the real size of the cell. Give your answer in μm .
A red blood cell has a diameter of 0.007mm. An image of a red blood cell has a diameter of 3.5mm. Calculate the magnification of the image.	Goblet cells from the lining of the intestine are observed at $\times 250$ magnification. One of the cells has an image size of 2.75mm. Calculate the real size of the cell. Give your answer in mm.	Three adjacent onion cells are viewed under a microscope at $\times 200$ magnification. The combined image size of all three cells is 75mm. Assuming all the cells are the same size, calculate the real size of a single onion cell. Give your answer in μm .