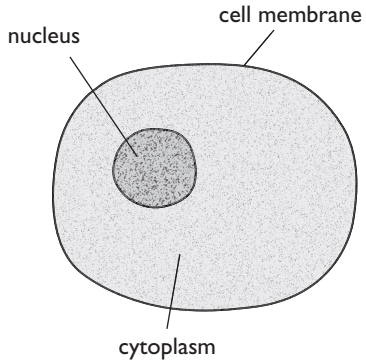
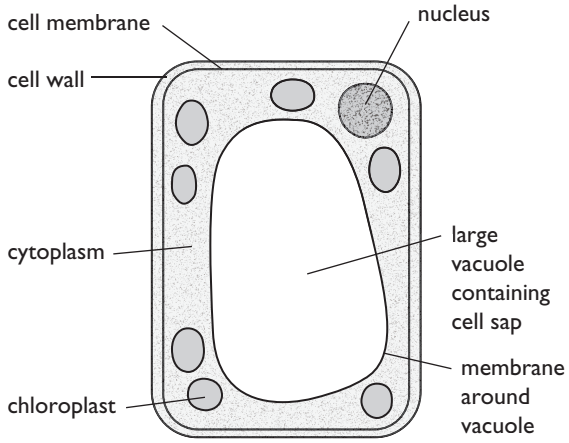
Answers to Workbook exercises Chapter 2

Exercise 2.1 Animal and plant cells

a



b



c **i** The width of the cell in the diagram is 50 mm.

ii So magnification = $\frac{50}{0.1}$ = ×500

d The length of the plant cell in the diagram is 60 mm.

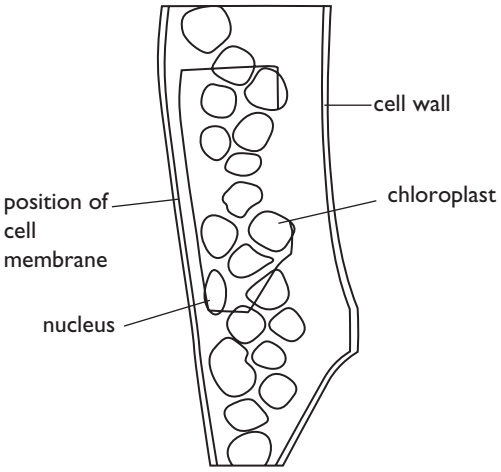
$$\text{magnification} = \frac{\text{size of drawing}}{\text{real size of object}}$$

So: real size of object = $\frac{\text{size of drawing}}{\text{magnification}}$

So: real height of plant cell = $\frac{68}{70}$ = 0.75 mm

Exercise 2.2 Drawing cells and calculating magnification

a



Use the self-assessment checklists to assess the drawing and labelling.

b **i** real size of object = $\frac{\text{size of drawing}}{\text{magnification}}$

So: real width of plant cell = $\frac{25\,\text{mm}}{2000}$

= 0.0125 mm

ii magnification – $\frac{\text{size of drawing}}{\text{real size of object}}$

So: magnification of student's drawing

= $\frac{\text{width of drawing in mm}}{0.0125\,\text{mm}}$

Exercise 2.3 Organelles

a nucleus

b cell wall

c cytoplasm

d cell membrane

e chloroplasts

f vacuole

g mitochondrion

h ribosome