Solutions

Each answer shows the steps, then the **result**.

2.1

- Volume

2.2

- SA $= 6(3^2) = 54$; V $= 3^3 = 27$; ratio $= 54/27 = 2$

2.3

- It provides more membrane per unit volume for faster exchange of materials

3.1 B

- a higher surface-area-to-volume ratio

3.2

(a)

- Side 2: SA $= 24$, V $= 8$, ratio $= 3$; side 5: SA $= 150$, V $= 125$, ratio $= 1.2$

(b)

- The smaller cell (side 2), with the higher ratio

3.3

- Folds greatly increase the membrane surface area without adding much volume, raising the surface-area-to-volume ratio and speeding exchange