Solutions

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

2.1

(a)

- centromere

(b)

- telomeres

2.2

- the DNA is replicated / copied

3.1 B

- DNA is replicated in the S phase

3.2 B

- Telomeres carry no genes, so losing a little does not lose genes

3.3

- mitosis copies the DNA exactly (S phase) and separates identical sister chromatids, so each daughter gets an identical set of genes; any two of: growth / replacement of dead cells / tissue repair / asexual reproduction

3.4

(a)

- an unspecialised cell that can keep dividing and can differentiate into specialised cells

(b)

- the cell divides repeatedly without stopping, forming an uncontrolled mass of cells — a tumour