

Solutions

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

2.1

- S phase

2.2

- The cell grows and carries out its normal functions

2.3

- It divides the cytoplasm, splitting the cell into two

3.1 B

- S phase

3.2

(a)

- It has doubled

(b)

- Mitosis separates the copied chromosomes into two identical nuclei, and cytokinesis splits the cytoplasm, producing two identical daughter cells

3.3

- Each daughter cell needs a full copy of the DNA; copying it first (in S) ensures there are two complete sets for mitosis to separate