

Solutions

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

2.1

- Mitochondria and chloroplasts

2.2

- Any one: own (circular) DNA, own ribosomes, double membrane, reproduce by binary fission

2.3

- By binary fission (dividing like bacteria)

3.1 B

- their own circular DNA and ribosomes

3.2

(a)

- Any two: own DNA, own ribosomes, double membrane, binary fission

(b)

- It proposes the chloroplast arose when a cell engulfed a photosynthetic bacterium that survived and lived inside it

3.3

- These are bacterial traits — free-living bacteria have their own DNA and reproduce by binary fission — so their presence in mitochondria points to a bacterial ancestor