

Solutions

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

2.1

- Antibiotic resistance in bacteria (or pesticide resistance in insects)

2.2

- No

2.3

- The resistant individuals

3.1 B

- selects for pre-existing resistant bacteria

3.2

(a)

- A few bacteria already carry a resistance allele; the antibiotic kills the susceptible ones; the resistant survivors reproduce; over generations resistance becomes common

(b)

- It selects for hard-to-treat resistant “superbugs”

3.3

- Selection can only act on existing variation — it favors the resistant allele but cannot create it; if no bacterium carried it, none would survive to reproduce