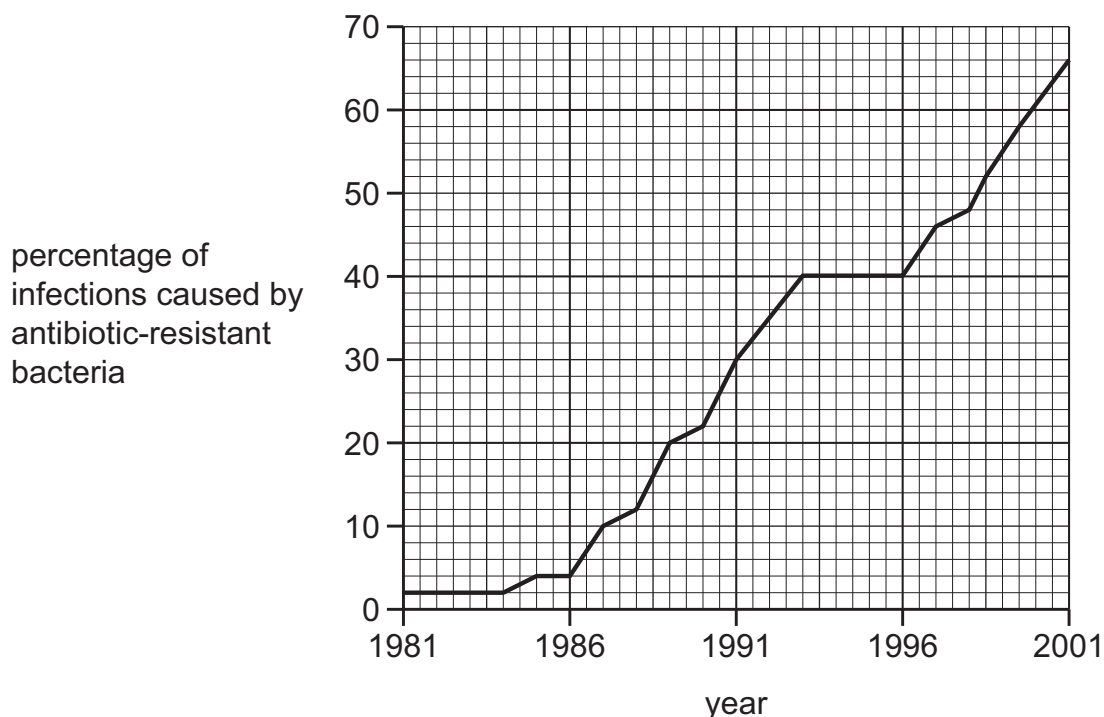


- 22** The graph shows the change in the percentage of infections caused by antibiotic-resistant bacteria in one country.



Which statements could explain the change in the percentage of infections caused by antibiotic-resistant bacteria?

- 1 The use of antibiotics has resulted in natural selection for resistant bacteria.
- 2 The use of antibiotics has caused a decrease in viral diseases.
- 3 The use of antibiotics when **not** essential increased the percentage of antibiotic-resistant infections.

A 1 and 2 **B** 1 and 3 **C** 2 and 3 **D** 3 only

- 30** What is a source of genetic variation that alters the base sequence of DNA?

- A** gene mutation
B mitosis
C random fertilisation
D random mating

- 34** What are features of hydrophytes which have leaves that float?

- A** long root system
B many stomata on upper surface of leaves
C hairy leaves
D small air spaces in the spongy mesophyll

34 Which term is used to describe a characteristic that helps an organism to survive and reproduce in its environment?

- A** adaptive feature
- B** competition
- C** observable feature
- D** phenotype

32 The table shows some features of leaves.

Which leaf is adapted to survive in hot, dry habitats?

	number of stomata	thickness of waxy cuticle	surface area of leaf
A	many	thick	small
B	many	thin	large
C	few	thick	small
D	few	thin	large

33 Which row correctly describes a type of selection?

	type of selection	humans involved	example
A	artificial	no	production of farmed animals that produce lots of milk
B	artificial	yes	production of bacteria that are resistant to antibiotics
C	natural	yes	production of insulin through genetic modification of bacteria
D	natural	no	production of wild animals with long necks to reach tree leaves as a food source

27 *Clostridium difficile* is a species of bacterium that is resistant to many antibiotics.

From 2002 to 2006, the number of people in one country infected with *Clostridium difficile* increased from 1300 to 6200 people.

What was the percentage increase in the number of people infected with *Clostridium difficile* from 2002 to 2006 to the nearest whole number?

- A** 21%
- B** 27%
- C** 79%
- D** 377%

32 What is a way in which new alleles are formed?

- A** artificial selection
- B** mutation
- C** natural selection
- D** sexual reproduction

33 How does artificial selection differ from natural selection?

- A** Artificial selection changes the characteristics of living things.
- B** Artificial selection is based on genetic variation.
- C** Artificial selection does **not** involve competition for resources.
- D** Artificial selection occurs over many generations.

34 Which diagram of a xerophyte is labelled correctly?