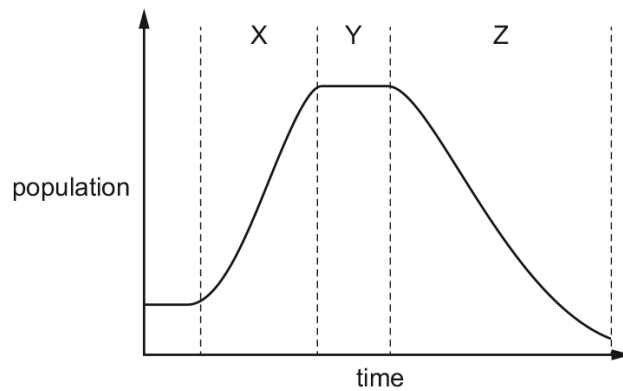


19.4 Population size

01. 0610_m21_qp_22 Q: 37

The graph shows the change in population of an organism over time in an ecosystem.



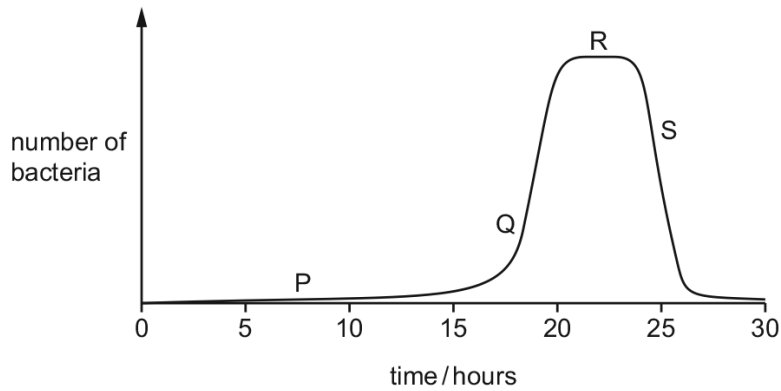
Which row correctly identifies each phase of the population graph?

	X	Y	Z
A	lag	exponential (log)	stationary
B	lag	stationary	death
C	exponential (log)	death	stationary
D	exponential (log)	stationary	death

19.4. POPULATION SIZE

02. 0610_w21_qp_21 Q: 36

The graph shows the growth curve for a population of bacteria.



The table identifies each phase shown in the graph.

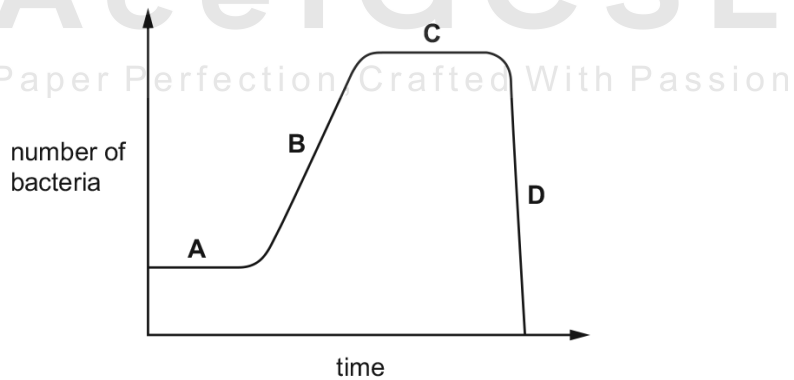
Which row is correct?

	death phase	exponential (log) phase	lag phase	stationary phase
A	P	Q	R	S
B	S	Q	P	R
C	S	P	Q	R
D	P	S	R	Q

03. 0610_w21_qp_22 Q: 34

The graph shows the growth of a bacterial population.

Which section represents the exponential (log) phase?



04. 0610_p20_qp_20 Q: 36

What is the correct match of example to ecological term?

	community	ecosystem	population	trophic level
A	all lake organisms	freshwater lake	freshwater shrimps	pond weed as primary producer
B	freshwater shrimps	all lake organisms	pond weed as primary producer	freshwater lake
C	freshwater lake	pond weed as primary producer	freshwater shrimps	all lake organisms
D	freshwater shrimps	freshwater lake	all lake organisms	pond weed as primary producer

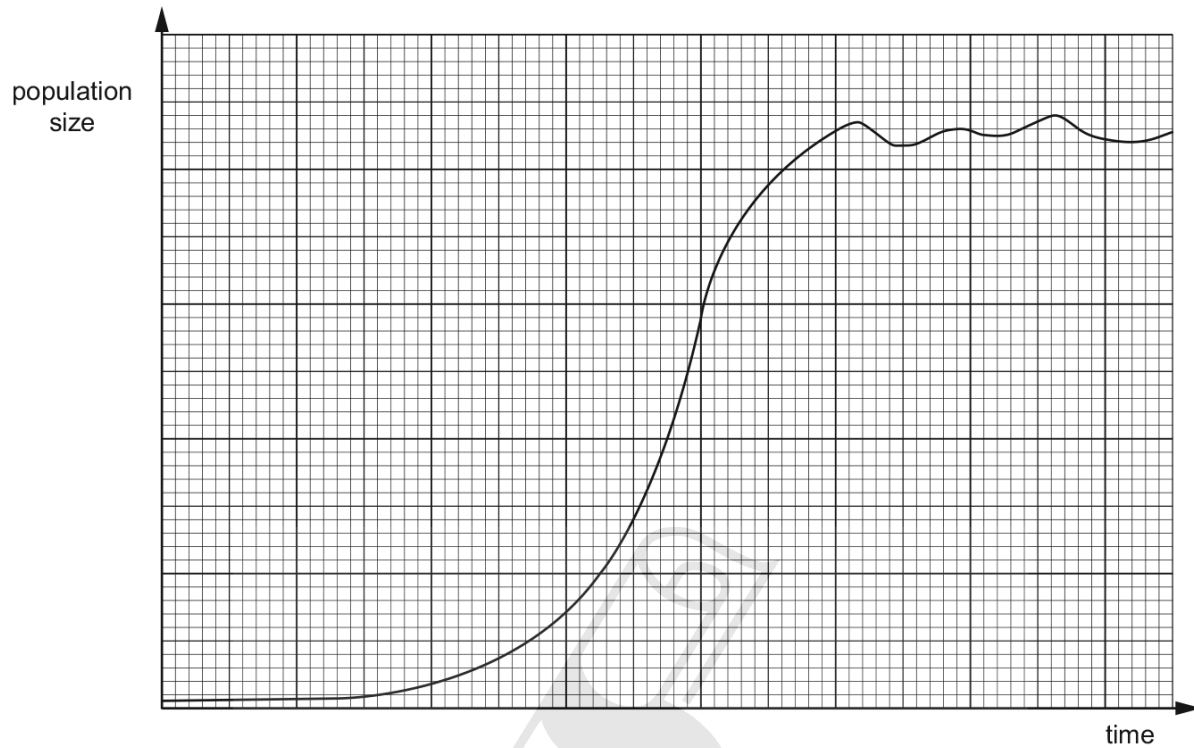


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19.4. POPULATION SIZE

05. 0610_p20_qp_20 Q: 37

Some rabbits colonised an island for the first time. The graph shows how their population size changed over the next few years.



What explains the way the size of the rabbit population changed during the exponential (log) phase?

- A birth rate and death rate in equilibrium
- B increasing number of rabbits able to reproduce
- C increase in the number of predators
- D limiting factors begin to take effect

06. 0610_s20_qp_21 Q: 36

What is defined as 'all of the populations of different species in an ecosystem'?

- A community
- B environment
- C habitat
- D trophic level

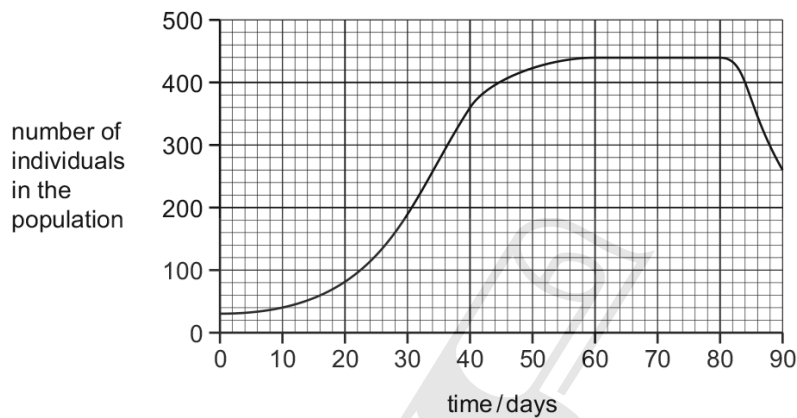
07. 0610_w20_qp_21 Q: 37

Which term is used to describe the phase of fastest growth in a population of bacteria?

- A stationary
- B lag
- C exponential
- D sigmoid

08. 0610_w20_qp_22 Q: 37

The diagram shows a population growth curve.



How long does the population remain in the stationary phase?

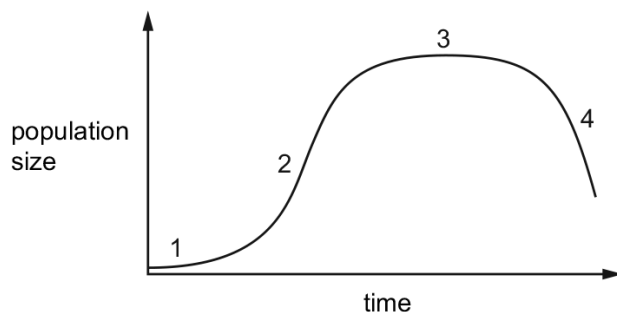
- A 8 days
- B 12 days
- C 23 days
- D 48 days

19.4. POPULATION SIZE

09. 0610_w20_qp_23 Q: 36

A few yeast cells were placed in a container of nutrient solution.

The graph shows how their population size changed over time.



Which row shows when the reproduction rate was greater than the death rate for the numbered phases on the graph?

	reproduction rate greater than death rate				
	1	2	3	4	
A	✓	✓	✓	x	key ✓= yes x= no
B	✓	✓	x	x	
C	✓	x	x	x	
D	x	✓	✓	✓	

10. 0610_s19_qp_21 Q: 37

Which term describes a group of organisms of one species, living in the same area, at the same time?

- A** community
- B** ecosystem
- C** genus
- D** population

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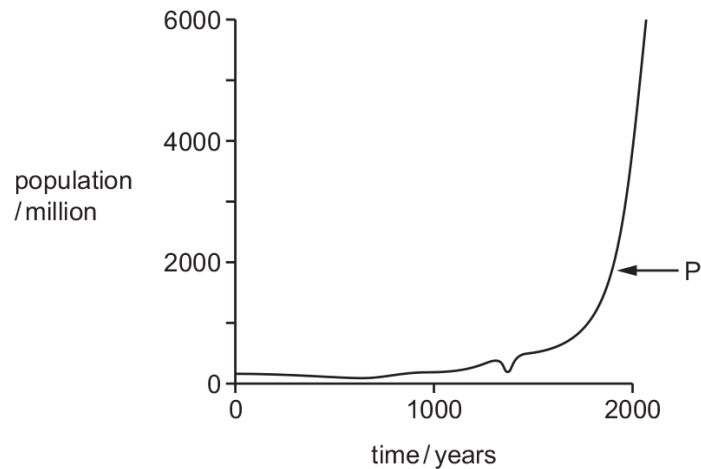
11. 0610_w19_qp_23 Q: 35

Which statement describes the effect of a disease which kills members of a population?

- A** It causes an exponential (log) increase in the population size.
- B** It decreases the rate of growth of the population.
- C** It decreases the food supply available to the population.
- D** It reduces the lag phase of the population.

12. 0610_m18_qp_22 Q: 34

The graph shows the human population of the world for the last 2000 years.

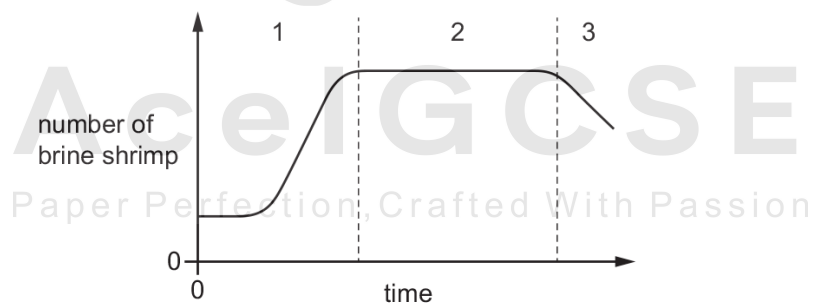


What is the phase identified by P?

- A death
- B exponential (log)
- C lag
- D stationary

13. 0610_s18_qp_22 Q: 36

The graph shows the changes in a population of brine shrimp over a period of time.



Over which section or sections is the birth rate greater than the death rate?

- A 1, 2 and 3
- B 1 and 2 only
- C 1 only
- D 2 only

19.4. POPULATION SIZE

14. 0610_s18_qp_23 Q: 36

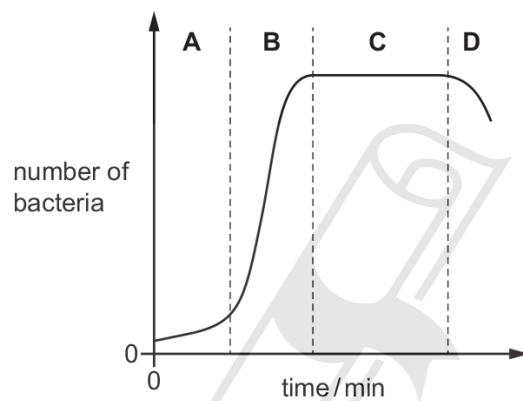
What is a community?

- A** a unit containing all the organisms in a given area, and their environment, interacting together
 - B** a unit in which energy is transferred from one organism to the next
 - C** all of the populations of different species in an ecosystem
 - D** all the organisms of one species in a given area
-

15. 0610_w18_qp_21 Q: 36

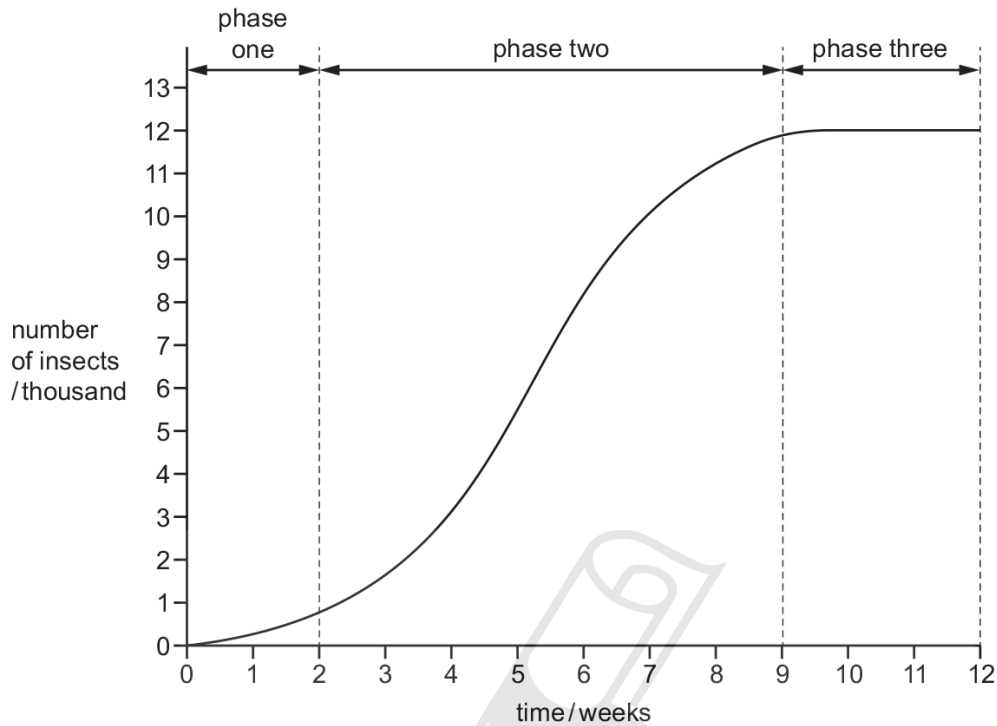
The graph shows a bacteria population curve.

In which phase on the graph is the number of bacteria dying equal to the number dividing?



16. 0610_w18_qp_23 Q: 36

A student was given data on the change in the number of insects in a population over a period of twelve weeks. The student was asked to name and label each phase.



What is the correct label for phase three?

- A death phase
- B exponential (log) phase
- C lag phase
- D stationary phase

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17. 0610_m17_qp_22 Q: 37

During the exponential (log) phase of a sigmoid growth curve, which factor limits population growth?

- A availability of food
- B build-up of wastes
- C presence of disease
- D rate of reproduction

19.4. POPULATION SIZE

18. 0610_s17_qp_21 Q: 34

Which of these is a population?

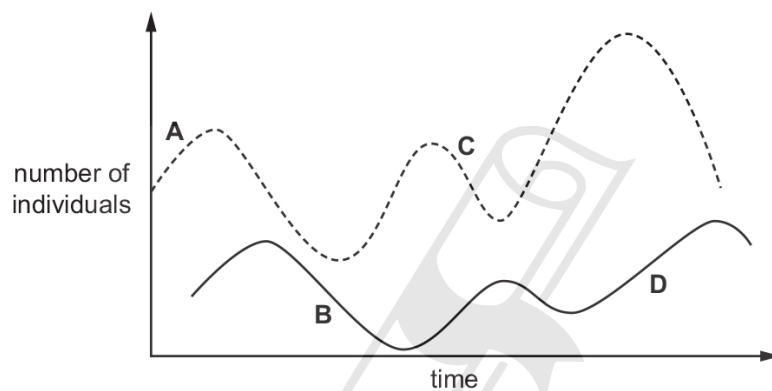
- 1 all the insects in a rainforest
- 2 all the tigers in a rainforest
- 3 all the kapok trees in a rainforest

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

19. 0610_s17_qp_21 Q: 37

The graph shows the changes in the populations of predator and prey over a period of time.

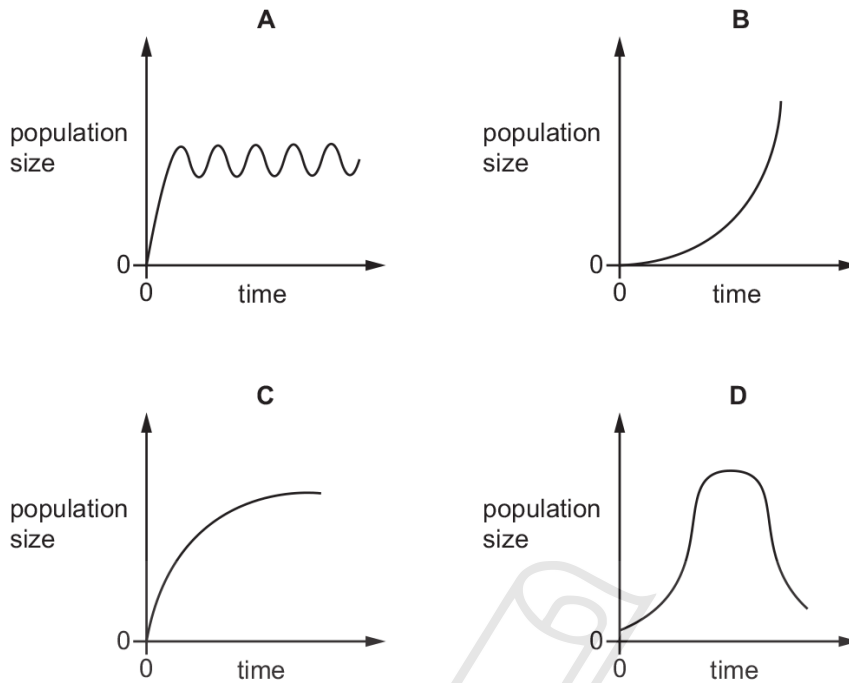
Which point on the graph shows a decrease in predator population?



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20. 0610_w17_qp_22 Q: 34

Which graph shows the growth of a population where there are no limiting factors?



21. 0610_w17_qp_22 Q: 35

What is defined as 'all of the populations of different species in an ecosystem'?

- A community
- B environment
- C habitat
- D trophic level

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22. 0610_p16_qp_20 Q: 36

What is the correct match of example to ecological term?

	community	ecosystem	population	trophic level
A	all lake organisms	freshwater lake	freshwater shrimps	pond weed as primary producer
B	freshwater shrimps	all lake organisms	pond weed as primary producer	freshwater lake
C	freshwater lake	pond weed as primary producer	freshwater shrimps	all lake organisms
D	freshwater shrimps	freshwater lake	all lake organisms	pond weed as primary producer

19.4. POPULATION SIZE

23. 0610_s16_qp_21 Q: 34

The whole of an island's population of short-haired bumblebees is descended from just two parents. These were introduced from the mainland.

Which statement about the island's short-haired bumblebee population, compared with that of the mainland, is correct?

- A The population is less in danger of collapsing from disease.
 - B The population is more able to adapt to environmental changes.
 - C The population shows more genetic variety.
 - D The population will adapt to environmental changes more slowly.
-

24. 0610_w16_qp_21 Q: 36

Which statement describes the effect of predation and disease on a population?

- A They cause an exponential (log) increase in the population size.
 - B They control the rate of growth of the population.
 - C They decrease the food supply available to the population.
 - D They reduce the lag phase of the population.
-

SN	Paper	Q. No.	Answer
01	0610_m21_qp_22	37	D
02	0610_w21_qp_21	36	B
03	0610_w21_qp_22	34	B
04	0610_p20_qp_20	36	A
05	0610_p20_qp_20	37	B
06	0610_s20_qp_21	36	A
07	0610_w20_qp_21	37	C
08	0610_w20_qp_22	37	C
09	0610_w20_qp_23	36	B
10	0610_s19_qp_21	37	D
11	0610_w19_qp_23	35	B
12	0610_m18_qp_22	34	B
13	0610_s18_qp_22	36	C
14	0610_s18_qp_23	36	C
15	0610_w18_qp_21	36	C
16	0610_w18_qp_23	36	D
17	0610_m17_qp_22	37	D
18	0610_s17_qp_21	34	D
19	0610_s17_qp_21	37	B
20	0610_w17_qp_22	34	B
21	0610_w17_qp_22	35	A
22	0610_p16_qp_20	36	A
23	0610_s16_qp_21	34	D
24	0610_w16_qp_21	36	B



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