

ANSWER KEY	Chapter 3 Test Answer Key	BLM 3.4.1A
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Answers to Multiple Choice Questions

1. a
2. d
3. b
4. b
5. c
6. d
7. a
8. c
9. d
10. b
11. c
12. b
13. a
14. b
15. a
16. d
17. a
18. b
19. b
20. c
21. c
22. d
23. d
24. a
25. b
26. c
27. d
28. a
29. c
30. d

Answers to Numerical Response Questions

1. 3, 1, 4, 2
2. 2, 5, 1, 6

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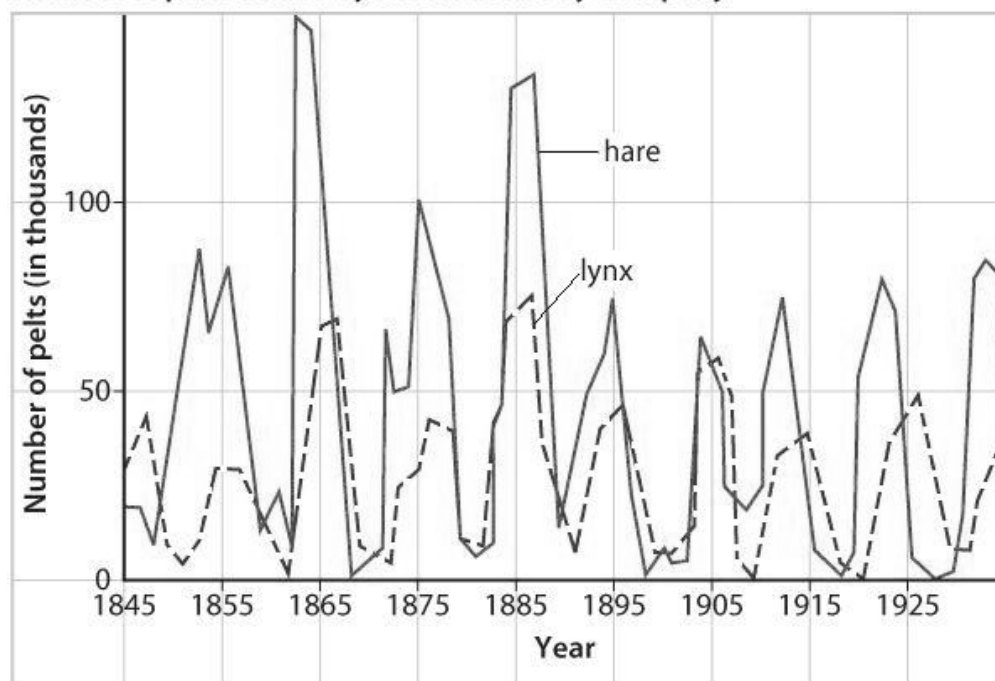
Answers to **Written Response** Questions

1. a) The relationship exhibited by the lynx and the hare is a biotic, prey-predator relationship. (1 mark)

b) The graph below represents the data collected by the Hudson's Bay Company and is based on the number of pelts collected during the time interval. Students' graphs will not be as complete but should show the cyclical nature (about every 10 years) of the population of both species. Students' graphs should show that normally the population of the prey is always higher than the population of the predator and that the population of the predator always lags a year or two behind the population of the prey species.

The graph should have a title, properly labelled *x*-axis, properly labelled *y*-axis, and have a suitable scale on both axes. It is unlikely that students will show the lynx data on a separate axis. (5 marks)

Number of pelts traded by the Hudson Bay Company



- c) The snowshoe hare species increases when the lynx population is low because there are fewer predators eating the prey. As the snowshoe hare population increases, the population of lynx will increase because more adults survive and reproduce. The more lynx that survive, the more hares they will eat, resulting in a decrease in the population of hares.

As well, a large snowshoe hare population puts stress on the vegetation, resulting in many hares either starving or not having the energy to escape predators. (4 marks)

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d) A year or two after the population of snowshoe hares starts to increase, the population of Canada lynx will increase. This is because the lynx primary food source is the snowshoe hare. As their food supply increases, more lynx survive and reproduce, resulting in an increase in size of the lynx population. However, as the number of lynx increases, the result will be a decrease in the size of the snowshoe hare population. Fewer hares means less energy available for the lynx. As a result, fewer lynx survive and reproduce and their population decreases. (4 marks)

e) Students could explain how hunting (trapping) of either species could disrupt the cycle. Students could explain how destruction of habitat could result in less food for the hares and/or less habitat (protection) for both species. This would disrupt the population of both species. Students could explain how rapid global climate change could change the amount of snow. The result could be less food (less water for plant growth in the spring and summer). It could also make the hares more visible in the fall and winter (snowshoe hare coats change colour in winter). (3 marks)