Name: _____ Class: _____ Date: _____

Data Analysis and Graphing

Introduction

Many of the experiments conducted in science are **quantitative,** meaning they incorporate numerical measurements. This type of data must be analyzed and presented in such a way that the audience can quickly determine the outcome and match it with the conclusion.

Predator-Prey Interactions

A survey was taken in the 19th century of lynx and snowshoe hare in part of the Ontario province of Canada. The data was based on the number of skins taken from animals caught by trappers. Showshoe hare are the main prey of the Canadian lynx. Very few other predators compete with the lynx for the hares.

Year	Population of Snowshoe Hare (in thousands)	Population of Lynx (in hundreds)
1845	20	32
1847	20	50
1849	52	12
1851	83	10
1853	64	13
1855	68	36
1857	83	15
1859	12	12
1861	36	6
1863	150	6
1865	110	65
1867	60	70
1869	7	40
1871	10	9
1873	70	20
1875	100	34
1877	92	45
1879	70	40
1881	10	15
1883	11	15
1885	137	60
1887	137	80
1889	18	26
1891	22	18
1893	52	37
1895	83	50
1897	18	35
1899	10	12

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In every experiment, there is an **independent variable** that the researcher is manipulating. The **dependent variable** is the one that is measured as a result of changes to the independent variable. When something is measured over a given time period, time is considered to be the independent variable.

Before you graph the results, **hypothesize** about what you believe the relationship will be between the snowshoe hare and Canadian lynx populations.

_____

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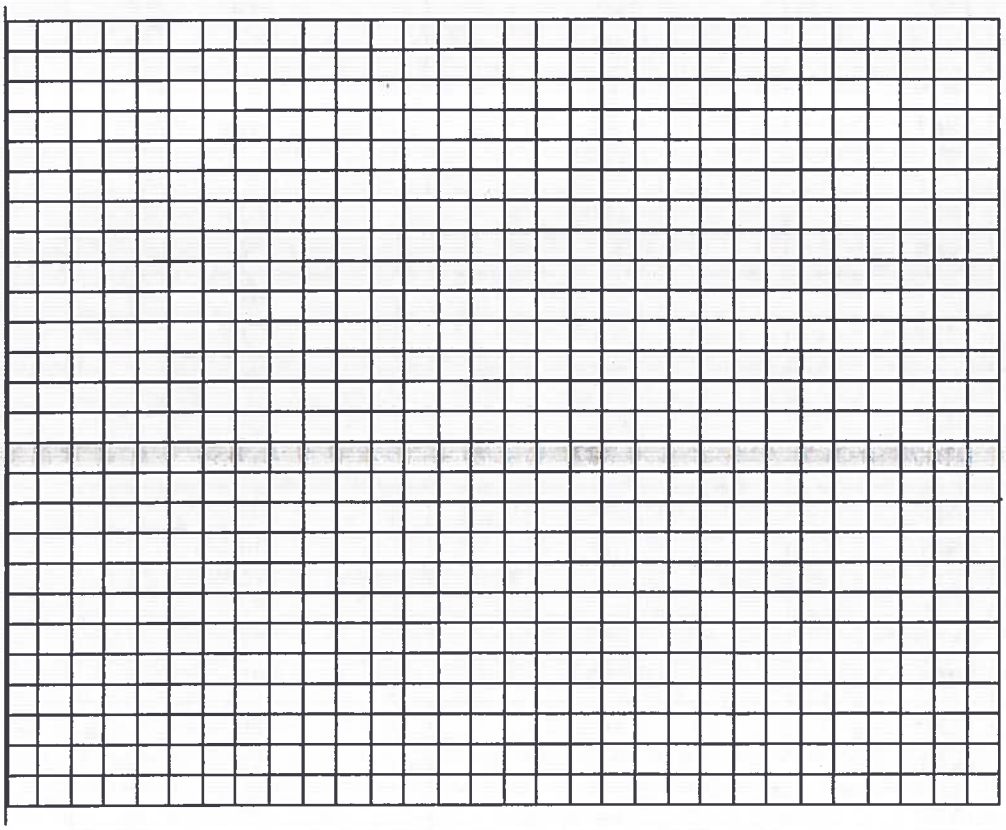
Make a line graph showing the change in showshoe hare and lynx populations over the given time period. Remember each of the following rules in making a properly formatted graph:

- Independent variables are graphed on the x-axis, while dependent variables are graphed on the y-axis.
- Both the x- and y-axis should have labels indicating what measurement is shown and the units used in that measurement, if applicable.
- An appropriate scale should be chosen that makes the graph small enough to confine to a single page, but large enough to show the differences between the points on the graph.



1. Based on the graph you completed above, do the results support your hypothesis, or should it be rejected? Explain.

2. Why are **line graphs** a good option when displaying data over time?