## Lesson 9: Increasing and Decreasing Functions

* Let’s look at what a graph does based on a situation.

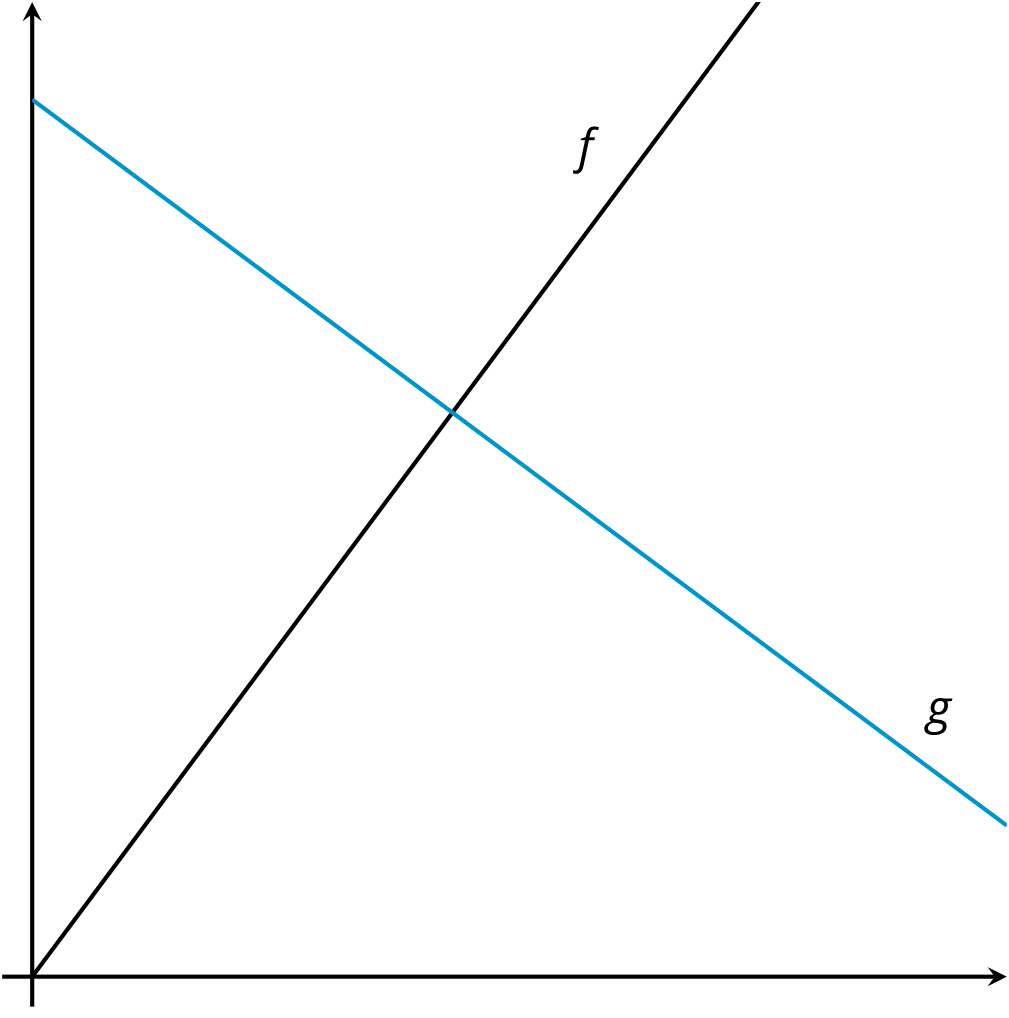
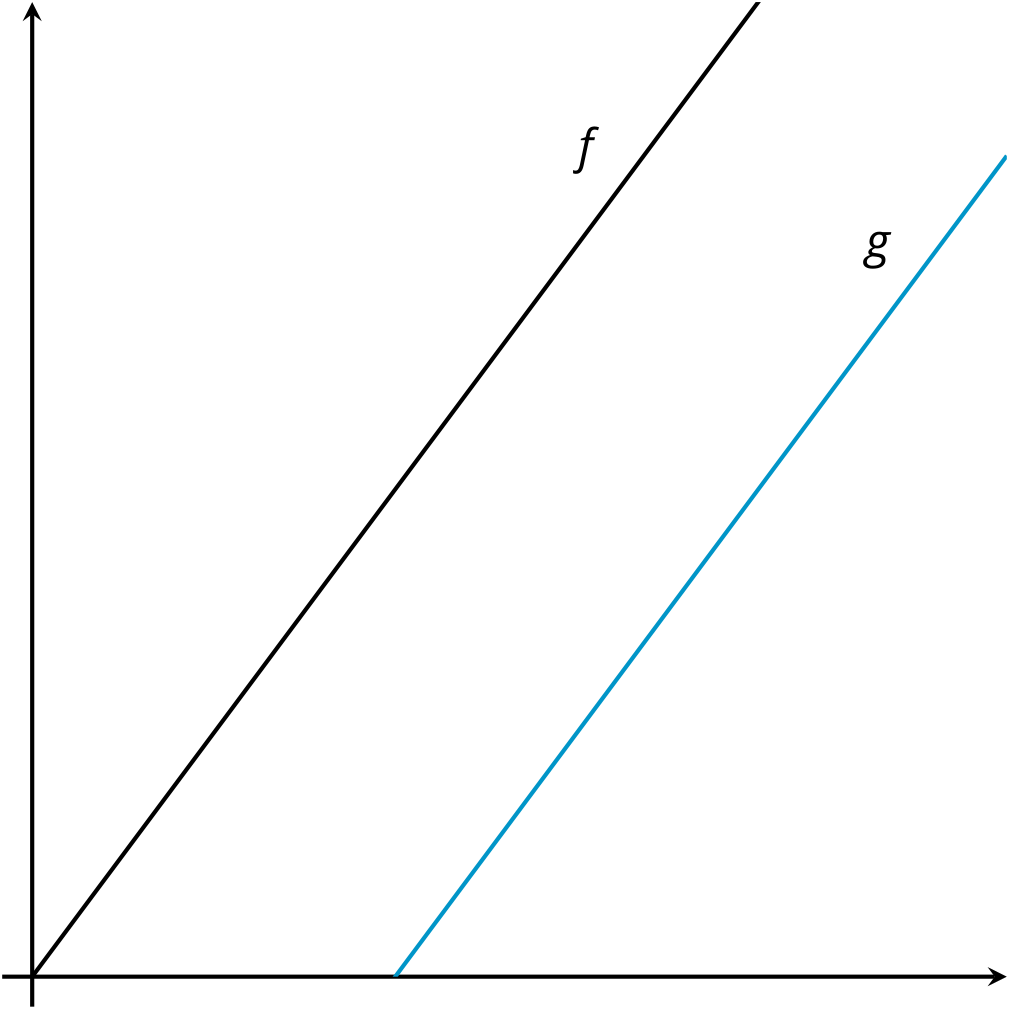
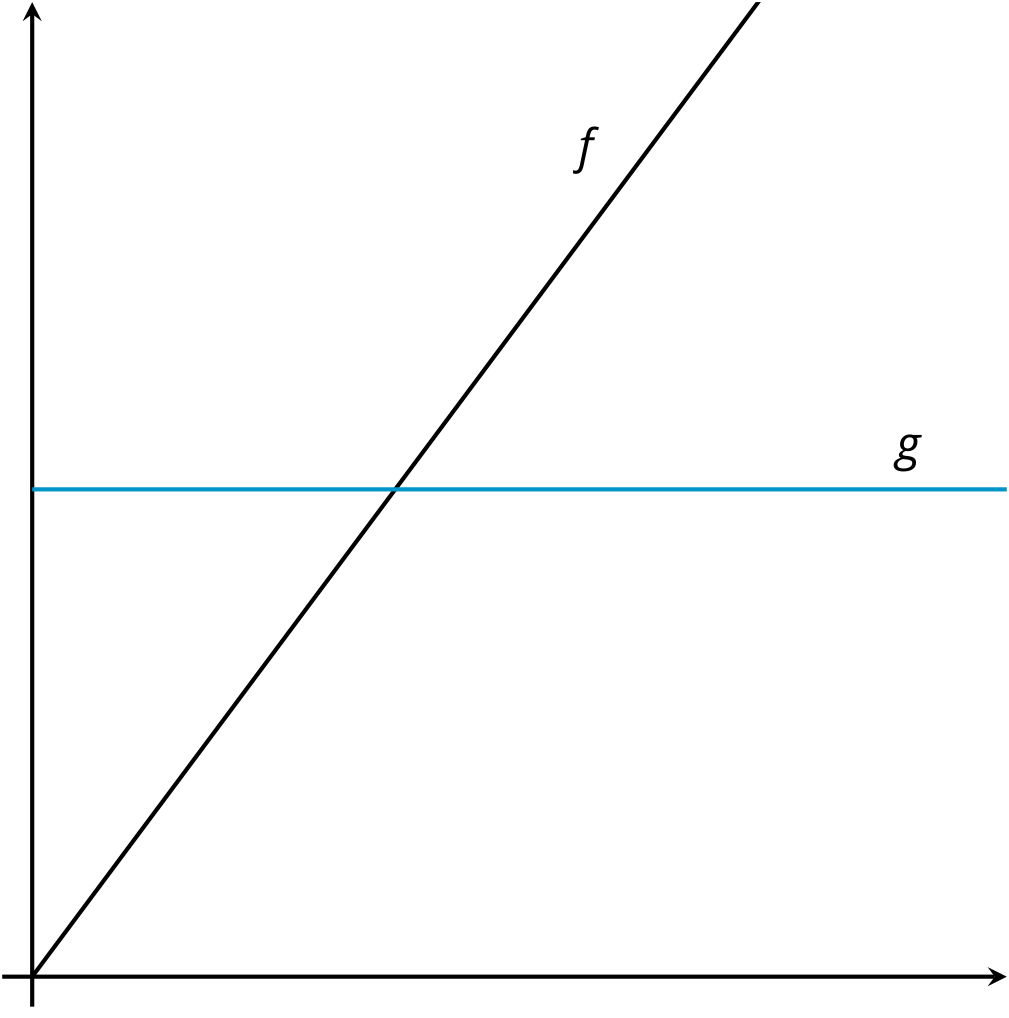
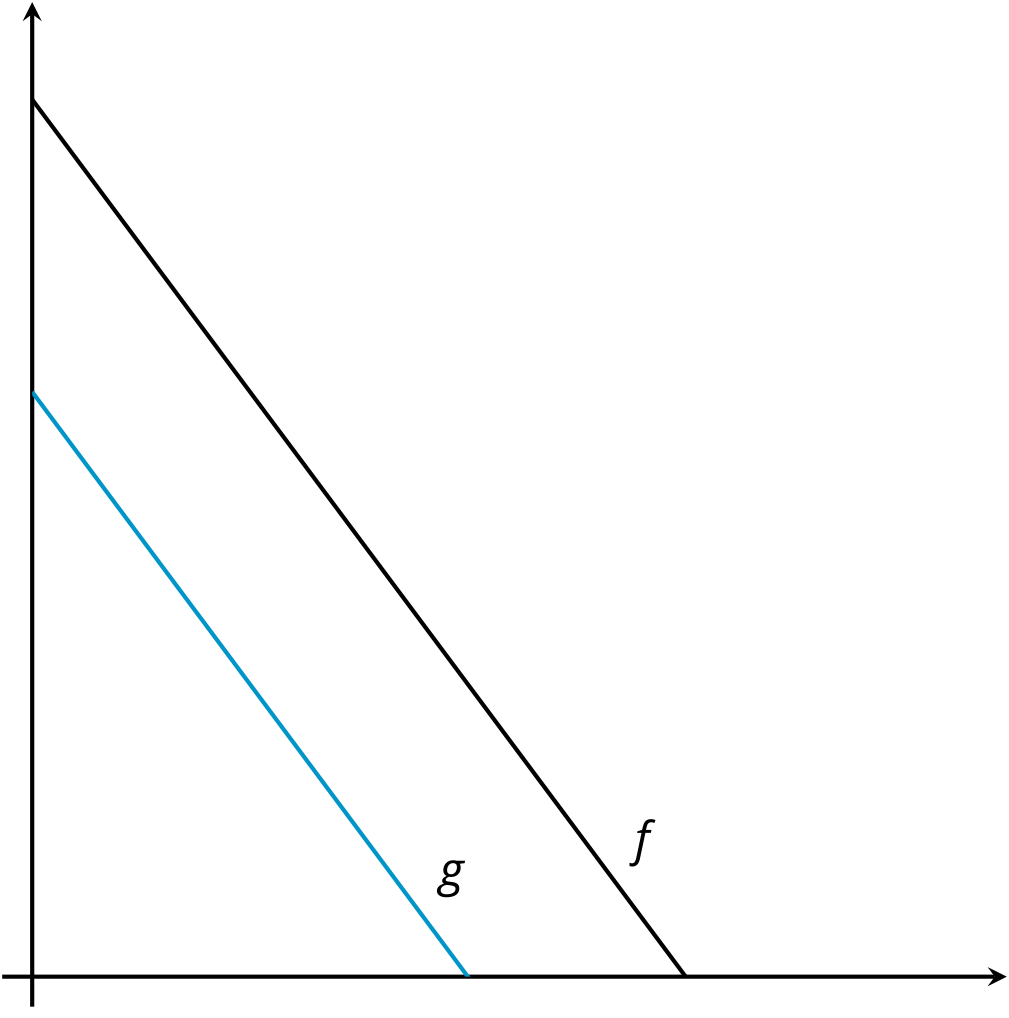
### 9.1: Comparing Values

For each pair of numbers, write , or in the blank to make a true equation or inequality. Be prepared to share your reasoning.

1. -6 -9
2. 5.2
3. Let .

### 9.2: What Could It Be?

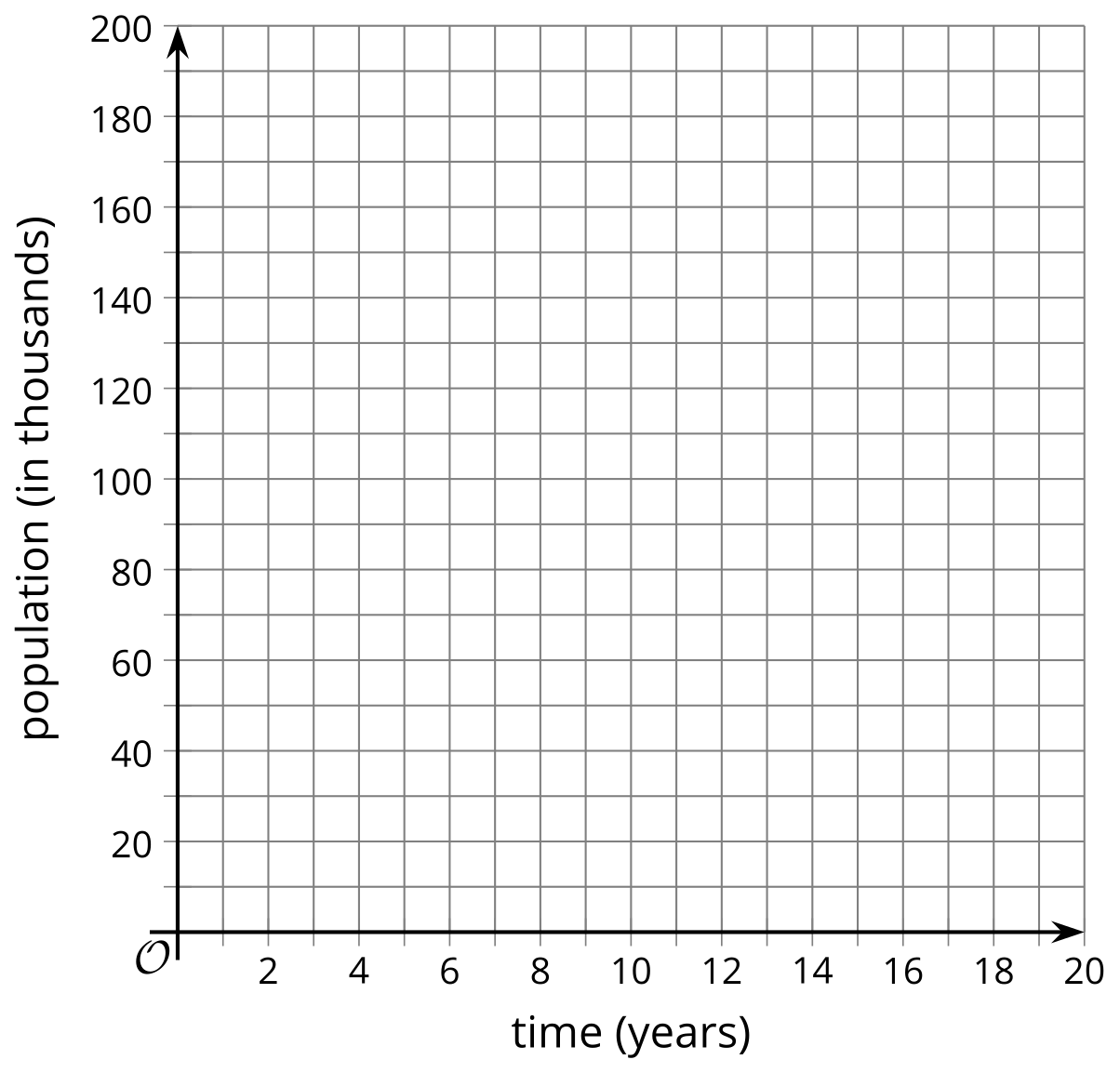
Describe and with a situation that could fit the given graphs. Explain your reasoning.

1. 
2. 
3. 
4. 

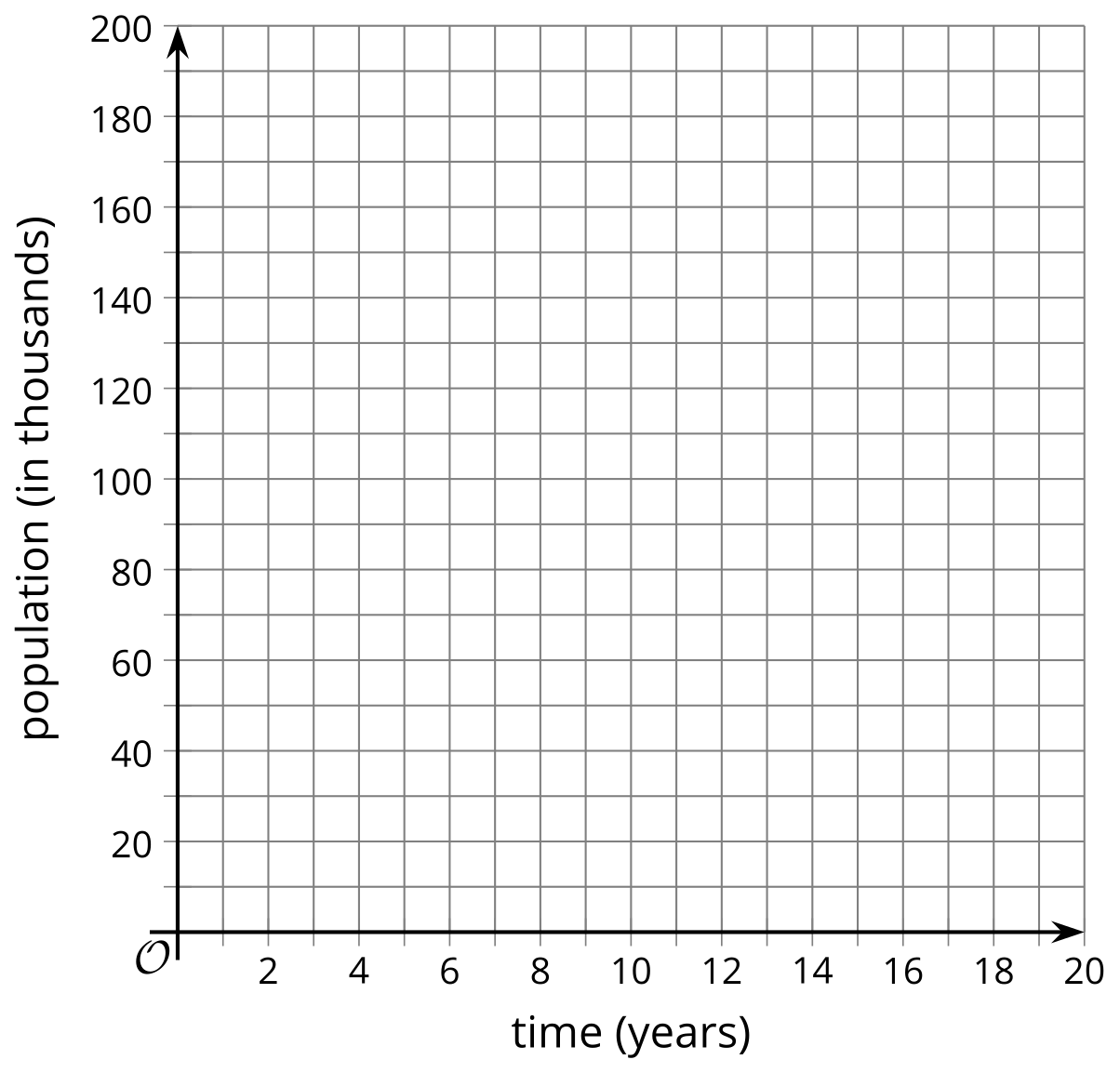
### 9.3: Cities, Towns, and Villages

Draw an example of a graph that shows two functions as they are described. Make sure to label the functions.

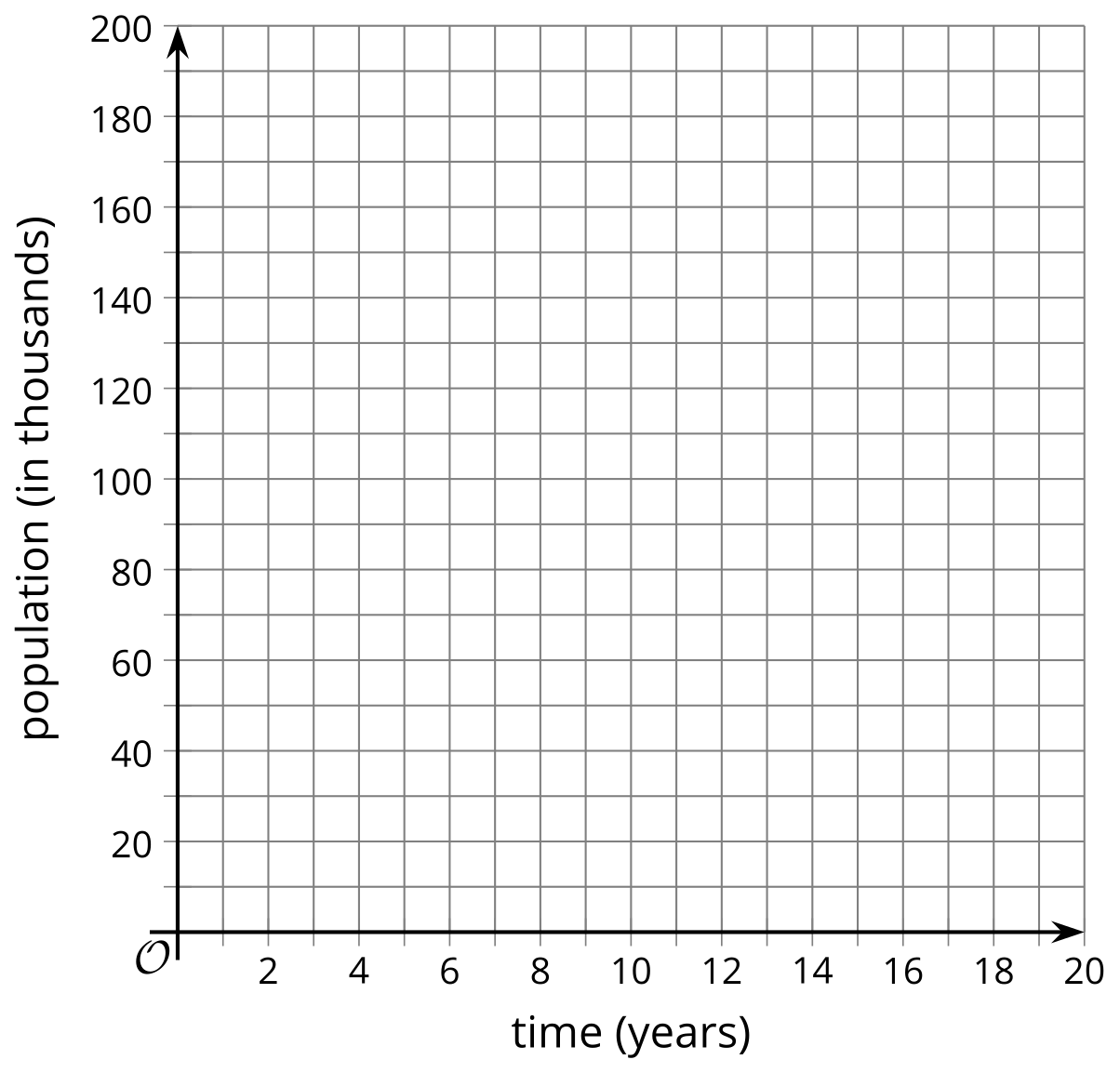
1. The population of 2 cities as functions of time so that city A always has more people than city B.

* 

1. The population of 2 towns as functions of time so that town A is larger to start, but then town B gets larger.

* 

1. The population of 2 villages as functions of time so that village A has a steady population and village B has a population that is initially large, but decreases.

* 



© CC BY 2019 by Illustrative Mathematics®