## Unit 4 Lesson 9: Increasing and Decreasing Functions

### 1 Comparing Values (Warm up)

#### Student Task Statement

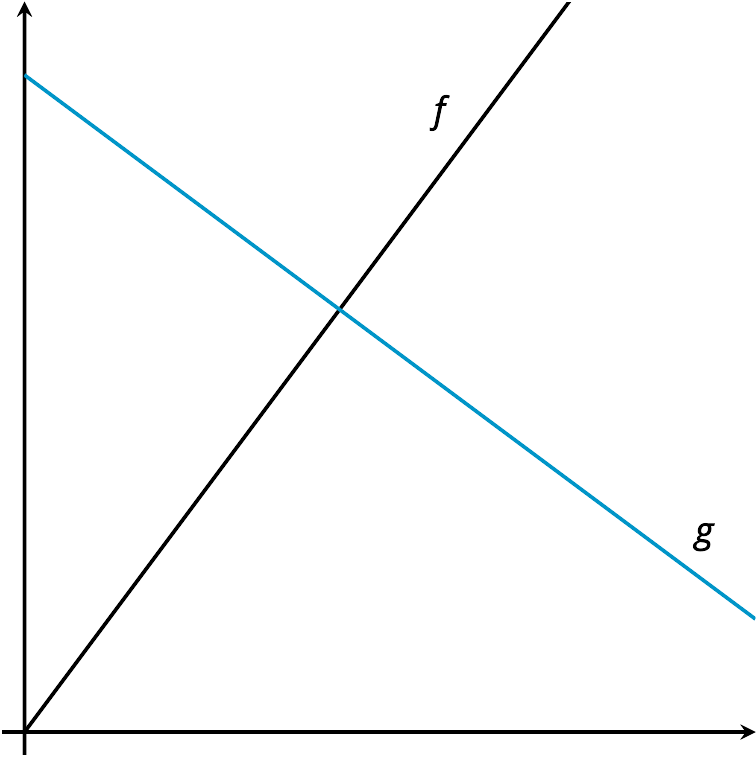
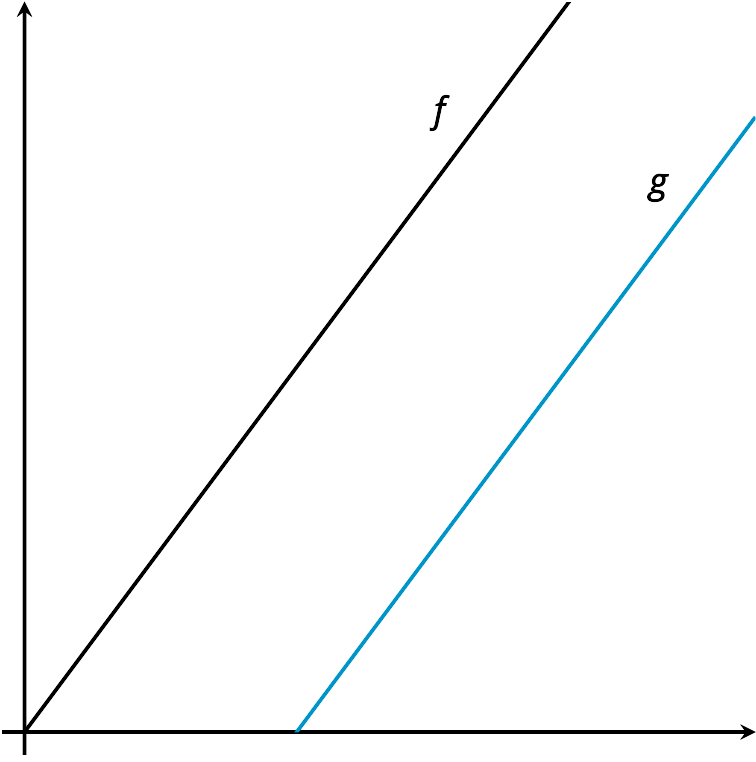
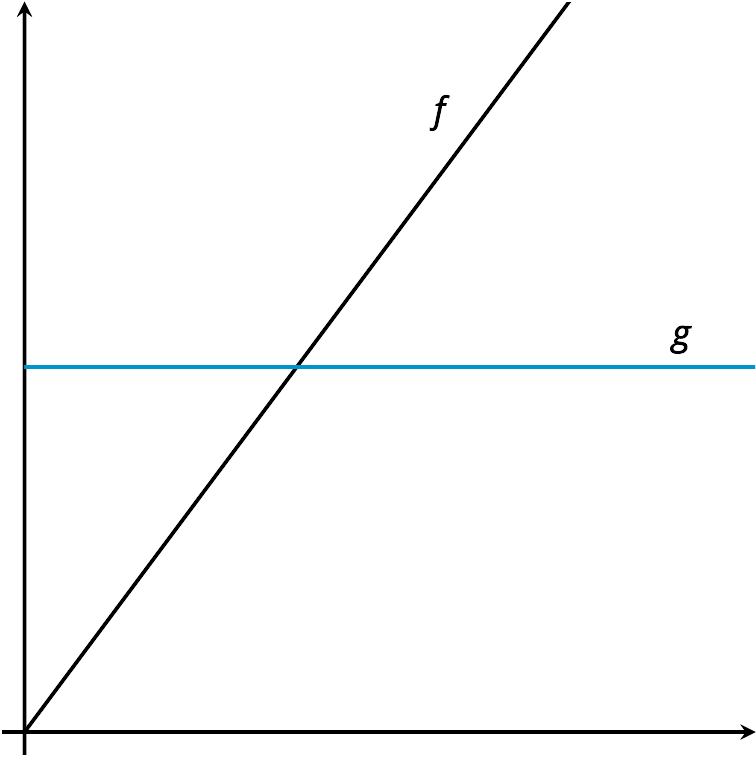
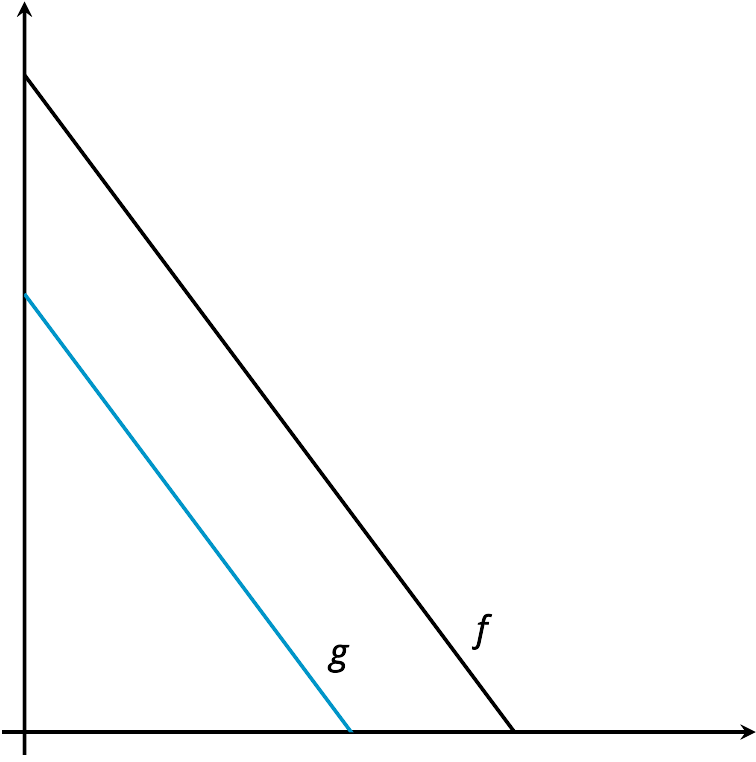
For each pair of numbers, write , or in the blank to make a true equation or inequality. Be prepared to share your reasoning.

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

### 2 What Could It Be?

#### Student Task Statement

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

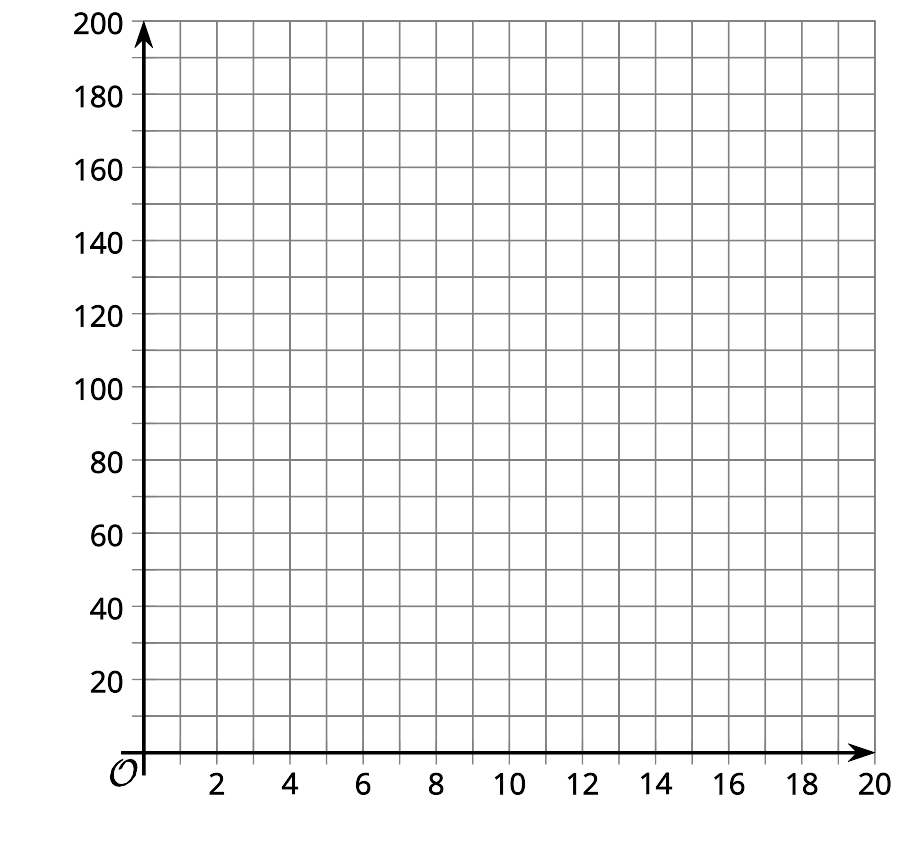
1. 
2. 
3. 
4. 

### 3 Cities, Towns, and Villages

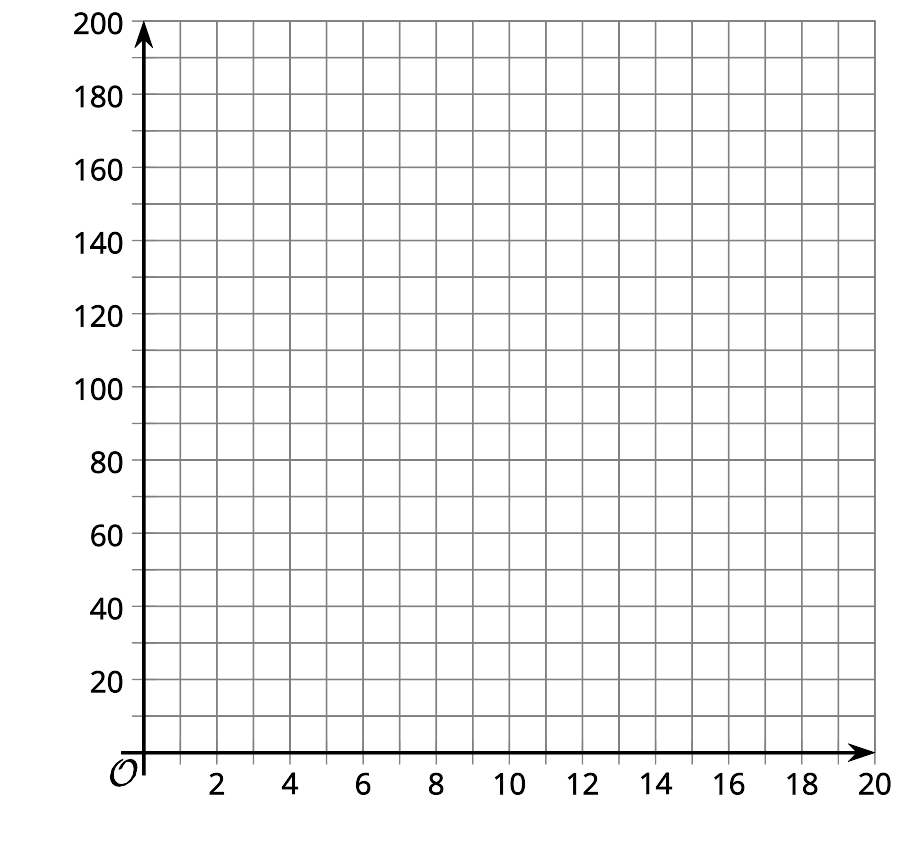
#### Student Task Statement

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

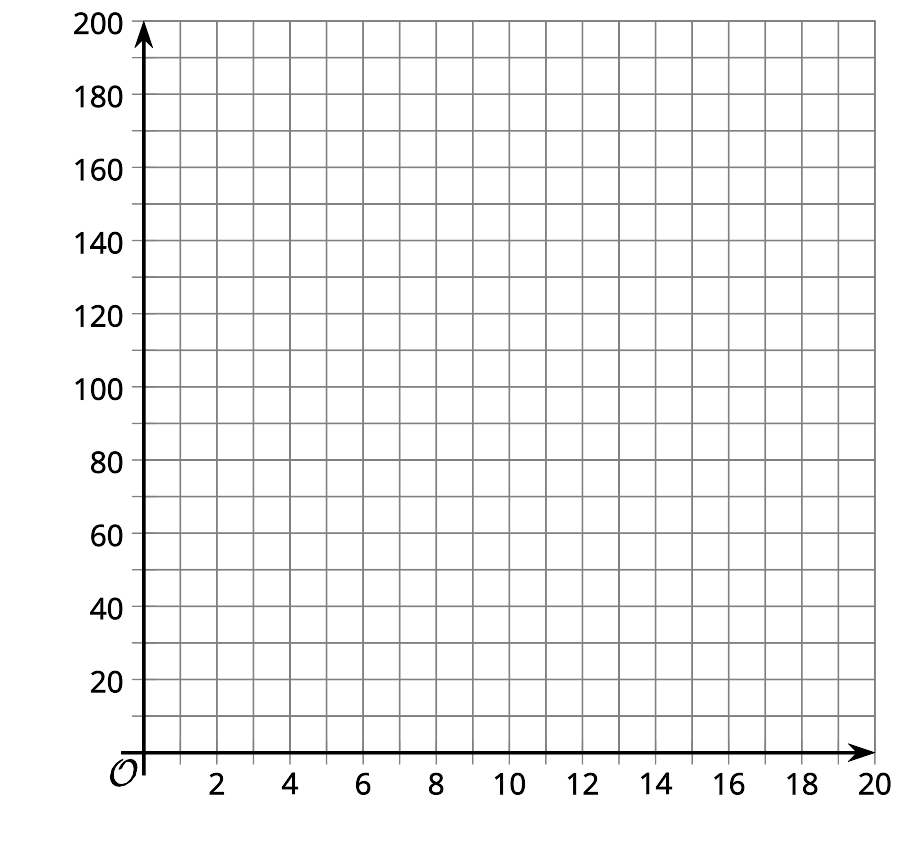
1. The population of 2 cities as functions of time so that city A always has more people than city B.

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

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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.

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