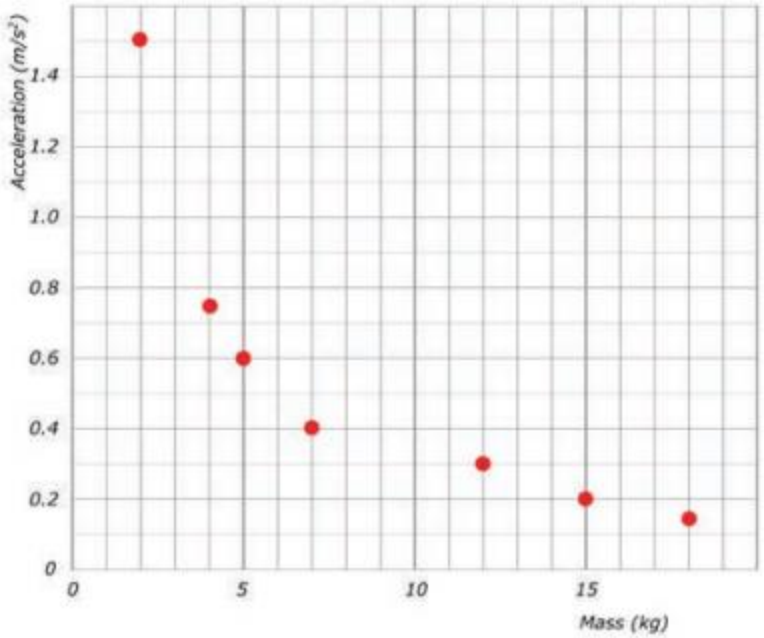
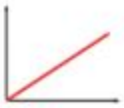
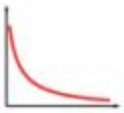
Using Representations

PART A: Plot the acceleration of the boxes versus the mass of each box.



Data Analysis

Graph	Relationship
	As x increases, y increases proportionally. y is directly proportional to x.
	As x increases, y decreases. y is inversely proportional to x.
	y is proportional to the square of x.
	The square of y is proportional to x.

PART B: Based on the graph you created in Part A, identify the correct relationship between the acceleration and mass of an object. Fill in the blanks.

As mass increases, acceleration decreases. Therefore, acceleration is inversely proportional to mass.

PART C: Based on your analysis in Part B, what could be graphed instead of mass and acceleration that would lead to a linear relationship?

Acceleration vs. 1/mass or mass vs. 1/acceleration

PART D: What is the physical meaning of the slope of the linearized graph suggested in Part C?

Either net external force (if acceleration were graphed vs. 1/mass) or 1/force (if mass were graphed vs. 1/acceleration)