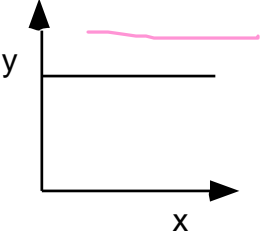
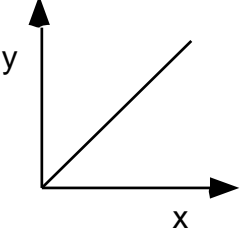
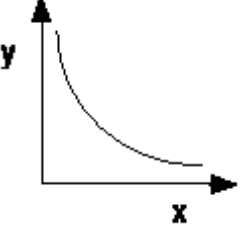
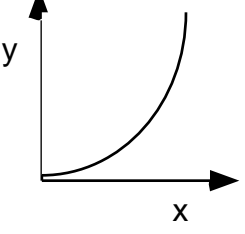
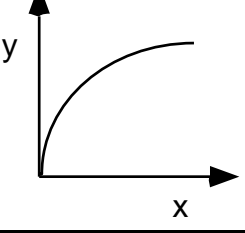


## Graphical Methods-Summary

A graph is one of the most effective representations of the relationship between two variables. The independent variable (one controlled by the experimenter) is usually placed on the x-axis. The dependent variable (one that responds to changes in the independent variable) is usually placed on the y-axis. It is important for you to be able interpret a graphical relationship and express it in a written statement and by means of an algebraic expression.

Graph shape	Written relationship	Modification required to linearize graph	Algebraic representation
	As x increases, y remains the same. There is no relationship between the variables.	None	$y = b$ , or y is constant
	<u>As x increases, y increases proportionally.</u> Y is directly proportional to x.	None	$y = mx + b$
	As x increases, y decreases. Y is inversely proportional to x.	Graph $y$ vs $\frac{1}{x}$ , or $y$ vs $\frac{1}{x}$	$y = m\left(\frac{1}{x}\right) + b$
	Y is proportional to the square of x.	Graph $y$ vs $x^2$	$y = mx^2 + b$
	The square of y is proportional to x.	Graph $y^2$ vs $x$  Y vs square root x	$y^2 = mx + b$  $y = m(\sqrt{x} + b)$

When you state the relationship, tell how y depends on x ( e.g., as x increases, y ...).