

Algebra 2 Worksheet
Variations: Direct, Inverse, and Joint

Name _____

Formulas:

Direct Variation
y varies as x
 $y = kx$

Inverse Variation
y varies as $\frac{1}{x}$
 $y = \frac{k}{x}$

Joint Variation
y varies as x and z
 $y = kxz$

Translate each statement into a formula. Use k as the constant of variation.

Class:

1. V varies jointly as B and H
2. P varies directly as the square of V and inversely as R

Practice:

3. The mass, M, of a cement block varies jointly as the length, L, width, W, and thickness, T, of the block
4. The volume, V, of a gas varies directly as the temperature, T, and inversely as the pressure, P.

Homework:

5. E varies jointly as M and the square of V.
6. The distance, D, that a free-falling object falls varies directly as the square of the time, T, that it falls.

Solve each of the following:

Class:

7. Find y when $x = -6$, if y varies directly as x and $y = 8$ when $x = 4$.

The lesson focuses on recognizing and understanding direct variation as a linear function.

The main questions involve knowing the characteristics of direct variation on equations, tables, on graphs, and on problem solving.

Modeling/Guided and Independent Practice

- The teacher distributes "Study Guide and Intervention" (page 36).
- By relating direct variation with previous activities on slope, the teacher exemplifies the properties of direct variation.
- From this juncture, its definition is revealed and its properties are enumerated.
- For each property, an example is provided. (See lecture notes.)
- Once the modeling is finished, a whole class discussion on Example 1 from the page 36 worksheet takes place.
- The teacher proceeds with explaining Example 2 accompanied by student participation.
- On the exercises, the teacher works on the first problem with the students.