



DIRECT VARIATION

"Y VARIES DIRECTLY AS X"

$$\frac{y}{x} = k$$

$$\frac{c}{d} = \pi$$

INVERSE VARIATION

"Y VARIES INVERSELY AS X"

$$xy = k$$

JOINT VARIATION

"Y VARIES JOINTLY AS X AND Z."

$$\frac{y}{x \cdot z} = k$$

"Y VARIES JOINTLY AS R AND S, AND INVERSELY AS T."

$$\frac{y \cdot T}{RS} = k$$



2.6 Constructing Functions with Variation

#22.

$$\frac{h}{N} = k$$

$$\frac{5}{4} = 1.05$$

$$h = 210, \quad z = 200$$

#34.

$$\frac{J}{GV} = k$$

$$\frac{\sqrt{3}}{\sqrt{2} \cdot \sqrt{8}} = \boxed{k = \frac{\sqrt{3}}{4}}$$

$$\frac{J}{\sqrt{6} \cdot 8} = \frac{\sqrt{3}}{4}$$

$$\frac{J = \sqrt{3} \quad G = \sqrt{2} \quad V = \sqrt{8}}{\text{what is } J \text{ when } G = \sqrt{6} \text{ and } V = 8?}$$

$$= 4J = \sqrt{18} \cdot 8$$

$$J = \sqrt{18} \cdot 2$$

$$= \sqrt{9} \cdot \sqrt{2} \cdot 2$$

$$J = 6\sqrt{2}$$