

Trig 3.8

* Alg 1 Ch. 5

** Alg 2 Ch. 9

Solve problems involving direct*, inverse**, joint** variation

direct variation $y = kx^n$

inverse variation $y = \frac{k}{x^n}$

constant of variation

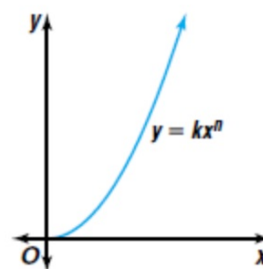
directly proportional

inversely proportional

joint variation $y = k \cdot x^n \cdot z^n$

combined $y = \frac{kx^nz^n}{w^n}$

activity: whiteboards (if time)



Solve for y...*

State in words

"varies directly as..."

"varies inversely as..."

"varies jointly as..."

* Unless it is already
solved for
something else, i.e. A,
C, etc...

$$y = \frac{1}{7}x^4$$

$$\frac{x^4}{y} = \frac{7}{1} \quad \frac{7y}{7} = \frac{x^4}{7} = \frac{1}{7}x^4$$

Write a statement of variation relating the variables of each equation. Then name the constant of variation.

9. $\frac{x^4}{y} = 7$

10. $A = \ell w$

11. $x = \frac{-3}{y}$

$$-3 = xy$$
$$y = \frac{-3}{x}$$

Write a statement of variation relating the variables of each equation. Then name the constant of variation.

25. $C = \pi d$

26. $\frac{x}{y} = \frac{4}{1}$

27. $\frac{4}{3}xz^2 = \frac{3}{4}y$

$$\frac{4y}{4} = \frac{x}{\frac{1}{4}}$$

$$y = \frac{1}{4}x$$

$$y = \frac{4}{3}xz^2$$

Solve for y...(or something)

Might be more than one correct answer

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$$28. V = \left(\frac{4}{3}\pi\right)r^3$$

$$29. \frac{4x^2}{1} = \frac{5}{y}$$

$$30. y = \frac{2}{\sqrt{x}}$$

$$\frac{S}{4x^2} = \frac{4x^2y}{4x^2}$$

$$y = \left(\frac{S}{4}\right)x^2$$

$$31. A = 0.5h(b_1 + b_2)$$

$$32. y = \frac{x}{3z^2}$$

$$33. \frac{1}{7}y = \frac{x^2}{z^3}$$

$$\frac{1}{3} \times \frac{x}{z^2}$$

