

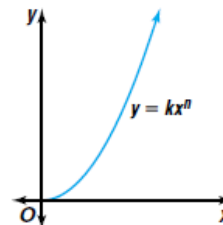
Trig 3.8

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

* Alg 1 Ch. 5
** Alg 2 Ch. 9

direct variation $A = k B$
 inverse variation $A = \frac{k}{B}$
 constant of variation
 directly proportional
 inversely proportional
 joint variation $A = k \frac{BC}{D}$
 activity: whiteboards (if time)

Quiz tomorrow 3.7-3.8



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Solve for y...*

State in words

"varies directly as..."

"varies inversely as..."

"varies jointly as..."

$$A = k B$$

$$A = \frac{k}{B}$$

$$A = k \frac{BC}{D}$$

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

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

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

10. $A = kw$

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

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

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

25. $C = \pi d$

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

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

$x = 4y$

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

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

Solve for y...(or something)

Might be more than one correct answer

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

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28. $V = \frac{4}{3}\pi r^3$

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

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

$\frac{4yx^2}{4x^2} = \frac{5}{4x^2}$

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

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

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

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

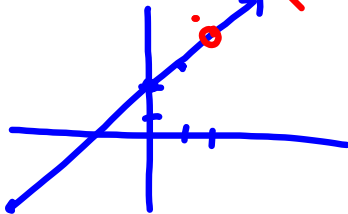
$y = \frac{7x^2}{z^3}$

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p. 187 (36)

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

$y = \frac{(x+2)(x-2)}{(x-2)}$



HA
VA
SA
Hm $x=2$

WB 3.8
p. 186 8-12

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$$\frac{-x^2}{y} = \frac{3}{7}$$

$$\frac{3y}{3} = \frac{-x^2}{3}$$

$$y = \frac{-1}{3}x^2$$

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(17) $y = \frac{x-2}{x^2+4x+3} = \frac{x-2}{(x+3)(x+1)}$

VA $x = -3$
 HA $x = -1$
 SA $y = 0$

$x+3=0 \Rightarrow x=-3$
 $x+1=0 \Rightarrow x=-1$

$\frac{x^2}{x^2} = \frac{1}{1}$

$\frac{3}{4} \times \frac{1}{1}$

$x^2+4x+3 \sqrt{x^3-2}$