

1A-BE TUESDAY 3-1-11

- ① Find m through $(4, 2), (0, 0)$
 - ② WRITE THE EOL for the line
in #① above.
 - ③ Find m through $(0, 0), (5, -2)$
 - ④ WRITE THE EOL for the line
in # 3 above.
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NOTE: LINES THAT PASS THROUGH
the origin $b = 0$

$$\therefore y = mx + b$$

$$= y = mx$$

Are so common they have their own
name. They are called Direct Variations
(ref. Chapter 5-2)

Homework Reviews: Pg 818-819 #1, 2, 4, 5, 7.

If you see the words, "y varies directly as x" ...

write $b = 0$

$$y = m x$$

You will be given ONE (x, y) pair,
use the (x, y) to find m .

EX (A) y varies directly as x. $y = 28$ when $x = 7$. Write the D.V. equation.

$$y = m x \quad b = 0 \quad (7, 28)$$

x, y

$$\frac{28}{7} = \frac{m \cdot 7}{7}$$

$$4 = m$$

$$\therefore \boxed{y = 4x} \text{ EOL}$$

(B) Find x when $y = 52$

$$y = 4x \quad \therefore$$

$$\frac{52}{4} = \frac{4x}{4}$$

$$\boxed{13 = x}$$

(C) Find y when x is -2

$$y = 4x$$

$$y = 4(-2)$$

$$\boxed{y = -8}$$

Just so you know, for historical reasons when you have a D.V.

M is often called K, the CONSTANT OF VARIATION

M and K ARE THE SAME THING!

M = K = rise/run = SLOPE = CONSTANT OF VARIATION

ONLY USED WHEN b=0 but M can still be used!!

EX) WRITE A DV EQUATION. Assume Y varies directly as X. Then solve (for given item).

A) If y=27 when X=6. Find X when y=45.

PART I = EOL
Y = MX b=0 (6,27)
27 = m6
9/2 = m
Y = 9/2 X

PART II - USE EOL
Y = 9/2 X
2/9 * 45 = 9/2 X * 2/9
10 = X

Ex $y = 10$ when $x = 9$. Find x when $y = 9$

use EOL

use EOL

$$y = mx + b = 0 \quad (9, 10)$$

x, y

$$\frac{10}{9} = \frac{m \cdot 9}{9}$$

$$\frac{10}{9} = m$$

$$y = \frac{10}{9}x$$

$$y = \frac{10}{9}x$$

$$\frac{9}{10} \cdot 9 = \frac{10}{9}x \cdot \frac{9}{10}$$

$$\frac{81}{10} = x$$

$$\text{or } 8.1 = x$$

Homework: Pg 268 # 21, 25, 33 to 36.