

BE-1A MONDAY 2-11-08

- ① DEFINE "SLOPE". (see Ch. 5-1)
 - ② DEFINE "RATE" (see glossary)
 - ③ DEFINE "RATE OF CHANGE" (see Ch. 5-1)
 - ④ GRAPH THE line $y = -3$
WHAT is its SLOPE?
 - ⑤ GRAPH THE line $x = 6$
WHAT is its SLOPE?
-

- M/U Quizzes
- RETURN graded quizzes/homework.

Ch 5-3 (CONTINUED)

1.

MODEL REAL-WORLD DATA,

↑
Number facts

using linear equations and graphs.

Can model if what you are looking at changes at a constant (or near constant) rate.

ex) You have saved \$15 for _____,
and are saving \$5 per week.



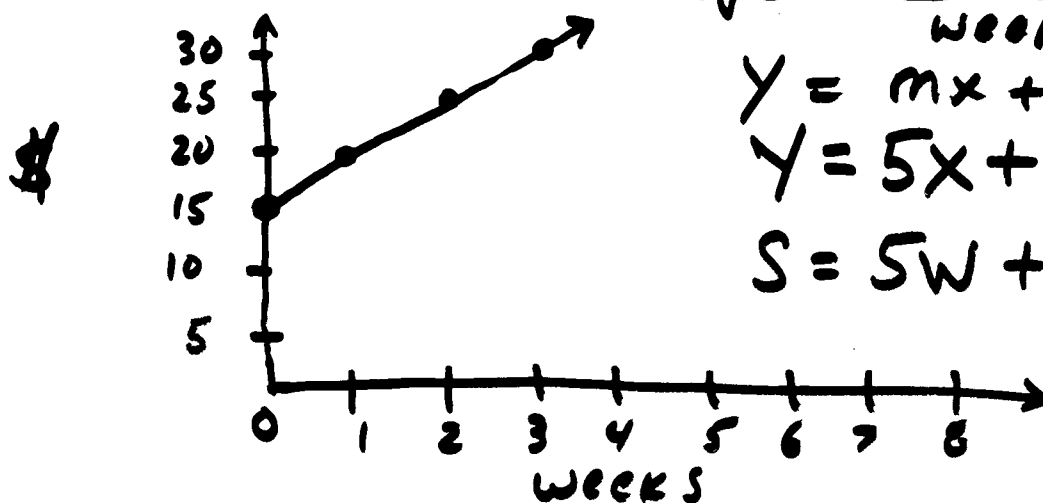
↑ (RATE)
per means a ratio

$$\text{SLOPE} = \frac{\text{dollars}}{\text{week}} = m$$

$$y = mx + b$$

$$y = 5x + 15$$

$$S = 5W + 15$$



What is the \$15? The "STARTING VALUE"

(Ex)

WRITE A LINEAR EQUATION IN SI form
to MODEL THE SITUATION. GRAPH it!

A video/dvd store CHARGES
\$10 to join AND \$3 per video
to rent.

IDENTIFY THE SLOPE AND STARTING VALUE

(m) (b)

3 10

WRITE linear EQUATION

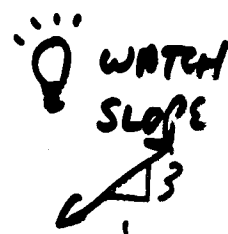
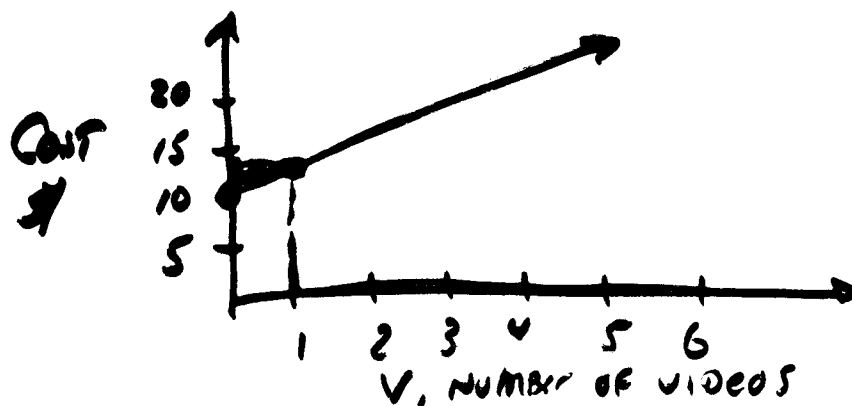
$$y = 3x + 10$$

Change to meaningful variables

$$C = 3v + 10$$

$C = \text{cost, \$}$
 $v = \text{number of videos}$

GRAPH



If what you are modeling is going up, slope is positive ↗ ⊕

If it is going down, slope is negative ↘ ⊖

Ex) IN 1989 EACH person in US consumed 133 pounds of NATURAL (ATE) sweeteners. Since then, the amount has increased 2.6 pounds per year. Model with an equation and graph

$$m = 2.6 \frac{\text{pounds}}{\text{yr}} \quad b = 133 \text{ pounds}$$

$$y = 2.6x + b$$

$$P = 2.6N + 133$$

$$\text{book } C = 2.6N + 133$$

see page 274 Ex 5

years $\Rightarrow$ time which is almost always the domain (the x)

P = pounds of sweet
 N = number of years since 1989

Homework: Pg 276 # 40-43, 45, 46.