

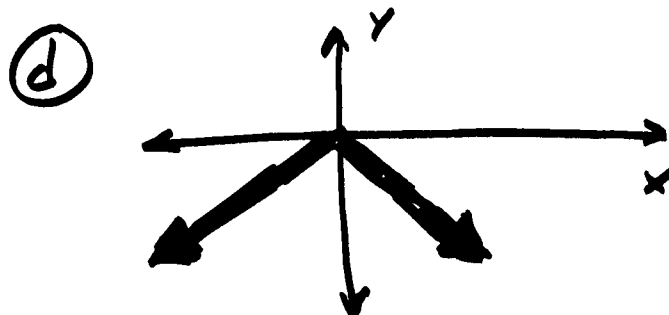
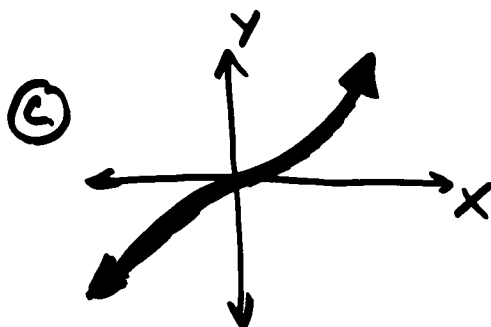
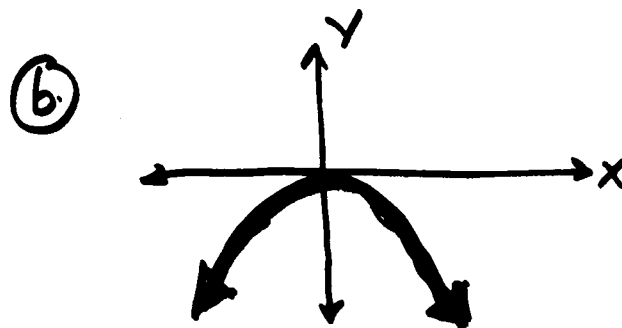
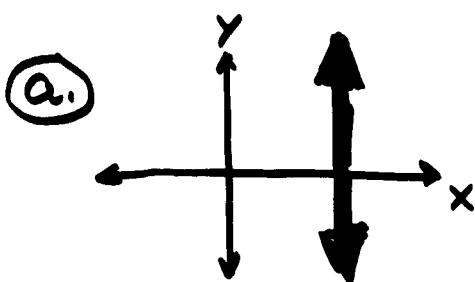
BE-1B TUESDAY 8-21-07

① Solve $\frac{3x+6}{4} = 3$

② Solve $-12 = \frac{5x-1}{3}$

③ Solve $-18 = 6(-r-4)$

④ FUNCTION: Yes or No, if NO WHY NOT



* TAKE OUT HOMEWORK, Page 185 #14 to 20

ANSGE WB

① Pg 36 # 3

② Pg 36 # 4

③ Pg 37 # 8

④ ② → ④ Pg 49 # 9

- A RATIO is ANOTHER NAME for a fraction
 - A RATIO is A comparison of 2 numbers by division. (EX) $\frac{3}{4}$, $\frac{19}{26}$, $\frac{x}{y}$
 - A proportion is AN EQUATION THAT STATES TWO RATIOS (fractions) ARE EQUAL. (EX) $\frac{3}{4} = \frac{6}{8}$ or $\frac{19}{26} = \frac{x}{82}$
-

- A property of a proportion is that its CROSS-PRODUCTS ARE EQUAL

EX) $\frac{3}{4} = \frac{6}{8}$

$3 \cdot 8 = 4 \cdot 6 \checkmark$

- Using THE "CROSS-PRODUCTS ARE EQUAL" property often MAKES SOLVING EQUATIONS THAT ARE PROPORTIONS EASIER TO SOLVE.

Ch. 3-6 "Ratios and Proportions"

EX 3
PG 156

Solve $\frac{N}{15} = \frac{24}{16}$

$$16N = 15 \cdot 24$$

TIP WAIT, don't multiply $15 \cdot 24$ yet, see if it simplifies when you divide by 16

$$\frac{16N}{16} = \frac{15 \cdot 24}{16}$$

$$N = \frac{15 \cdot \overset{3}{\cancel{24}}}{\cancel{16}_2}$$

$\div$ Top $\div$ bottom by 8

$$N = \frac{45}{2} \text{ or } 22.5$$

$\uparrow$
PREFER

Many "RATE" AND "SCALE" problems
can be SET UP AND SOLVED USING
proportions.

EX 4
Pg 157

TRENT RIDES A bike 30 miles
Every Saturday. It takes him
4 hours. At this RATE, how far
can he ride in 6 hours?

Let d = the unknown distance

$$\frac{30 \text{ miles}}{4 \text{ hours}} = \frac{d \text{ miles}}{6 \text{ hours}}$$

TIP MAKE
SURE
YOU
COMPARE
"like"
to
"like"

$$4d = 6 \cdot 30$$

$$d = \frac{\overset{3}{\cancel{6}} \cdot \overset{15}{\cancel{30}}}{\cancel{4} \cdot \cancel{2}} = 45$$

$$\boxed{d = 45 \text{ miles}}$$

EX5
Pg 157

Map for Crater Lake park
has scale of 2 inches = 9 miles
Distance on map is $1\frac{3}{4}$ inches,
WHAT is "real" distance? (between
2 points)

$$1\frac{3}{4} = \frac{7}{4} \text{ inches}$$

Let d = distance in miles

$$\frac{2 \text{ inches}}{9 \text{ miles}} = \frac{\frac{7}{4} \text{ inches}}{d \text{ miles}}$$

$$2d = 9 \cdot \frac{7}{4}$$

$$2d = \frac{63}{4}$$

$$d = \frac{\frac{63}{4}}{2} = \frac{63}{4} \cdot \frac{1}{2}$$

$$d = \frac{63}{8} \text{ or } 7\frac{7}{8} \text{ miles}$$

↑
prefer in
Algebra

↑
prefer when
using map

2 SPECIAL CASES:

① VARIABLE "GOES AWAY", left WITH a TRUE STATEMENT, like $3 = 3$

SOLUTION is $\{\text{ALL REAL NUMBERS}\}$

② VARIABLE "GOES AWAY" left WITH a FALSE STATEMENT, like $3 = 0$

SOLUTION is "NO SOLUTION"

or
 $\{\text{EMPTY SET}\}$

CLASSWORK / HOMEWORK:

Pg 182 # 33, 34, 36

39, 40, 43