BE-Algebra 1 | Tuesday 9-28-10

1. Convert $0.3\overline{5}$ to a fraction
2. $A = \frac{1}{2}h(a+b)$ for h
3. A minivan needs 5 gal. of gas for a 120 mi trip. How much will they need for a 350 mile trip? (to nearest tenth)

- Homework review – Pg 158-159 # 19-24, 31-35

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1. $N = 0.3\overline{5} = 0.35555\ldots$

$100N = 35.5555\ldots$

$-N \quad -.3555\ldots$

$99N = 35.2$

$N = \frac{35.2}{99} = \frac{352}{990} = \boxed{\frac{176}{495}}$

2. $A = \frac{1}{2}h(a+b) \therefore \boxed{h = \frac{2A}{(a+b)}}$

3. $\frac{5\text{ GAL}}{120\text{ mi}} = \frac{g}{350\text{ mi}} \therefore \frac{120g}{120} = \frac{5 \cdot 350}{120}$

$g = \frac{175}{12} \approx \boxed{14.6\text{ GAL}}$

$12\overline{)175}$ = 14.58

$\frac{12}{55}$

$\frac{48}{70}$

$\frac{60}{100}$

More About Square Roots

What is $\sqrt{25}$?

5, because $5 \cdot 5 = 25$

What about -5 ?

$-5 \cdot -5 = 25$ This is also a square root of 25

(*d) Convention: $\sqrt{25} = 5$ the positive or principal square root

$-\sqrt{25} = -5$

$\pm\sqrt{25} = \pm 5 = 5, -5$

$\sqrt{16} = ?$

$-\sqrt{100} = ?$

$\sqrt{64} = ?$

$\pm\sqrt{49} = ?$

$\pm\sqrt{10} = ?$ Between what two integers?

$\pm\sqrt{10} \approx \pm 3.16227766$ Why $\approx$?

$\sqrt{-10} = ?$

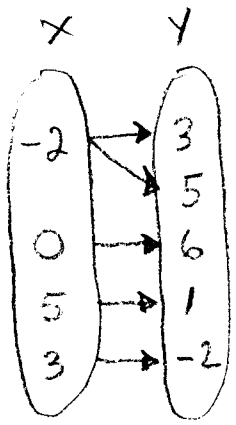
RELATION A SET OF ORDERED PAIRS.

(EX) $\{(-2,3), (-2,5), (0,6), (5,1), (3,-2)\}$

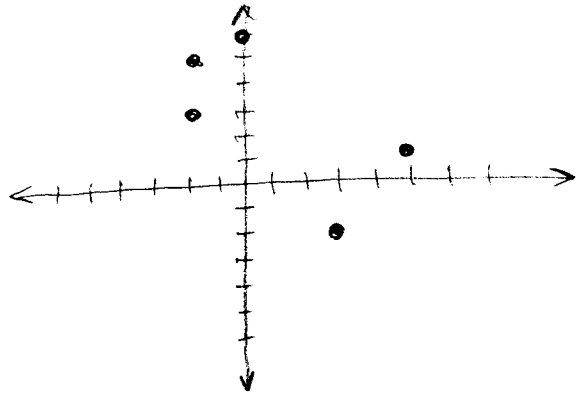
Other ways to show a relation:

X	Y
-2	3
-2	5
0	6
5	1
3	-2

TABLE



MAPPING



GRAPH

IDENTIFY THE (IV, DV) AND (D, R).

- AN EQUATION IS ANOTHER WAY TO SHOW A RELATION.
- If the equation has 2 VARIABLES, ONE is the domain the other is the RANGE — SO YOU CAN GRAPH the EQUATION!!

SOLVE FOR THE D.V.
(get y by itself)
"pick x, find y" ⇒ y depends on x!

(*) (EX) GRAPH $4x + y = 3$

Step 1 Solve for y:

$$4x + y = 3$$
$$-4x \qquad -4x$$
$$y = 3 - 4x \text{ OR}$$
$$y = -4x + 3$$

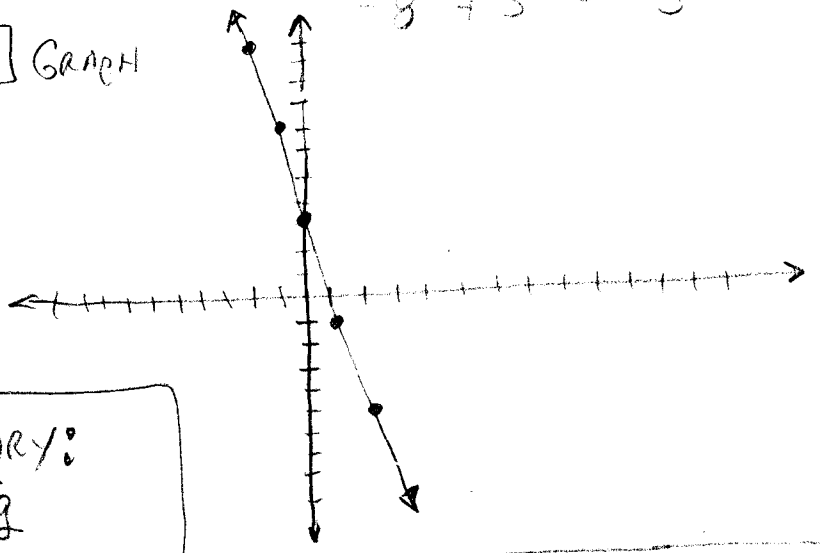
Step 2 MAKE A T-TABLE, PICK 5 "X" VALUES TO START:

PICK X, FIND Y

USE MORE X VALUES TO $\pm\infty$ IF NEEDED

X	$y = -4x + 3$	(X, Y)
-2	$-4(-2) + 3$ $8 + 3 = 11$	(-2, 11)
-1	$-4(-1) + 3$ $4 + 3 = 7$	(-1, 7)
0	$-4(0) + 3 = 3$	(0, 3)
1	$-4(1) + 3$ $-4 + 3 = -1$	(1, -1)
2	$-4(2) + 3$ $-8 + 3 = -5$	(2, -5)

Step 3 GRAPH



NOTE: UNLESS TOLD OTHERWISE, ASSUME DOMAIN = {Reals}

Summary: (*M) yTg

Solve for Y | T TABLE | GRAPH

Ch 4-4 EQUATIONS AS RELATIONS

Ex 3 Pg 213 GRAPH $4x + 2y = 10$ if domain $= \{-1, 0, 2, 4\}$

⇒ Solve for y: $-4x \quad -4x$

$$\frac{2y}{2} = \frac{-4x + 10}{2}$$

$$y = \frac{-4x + 10}{2}$$ "Heart Division"

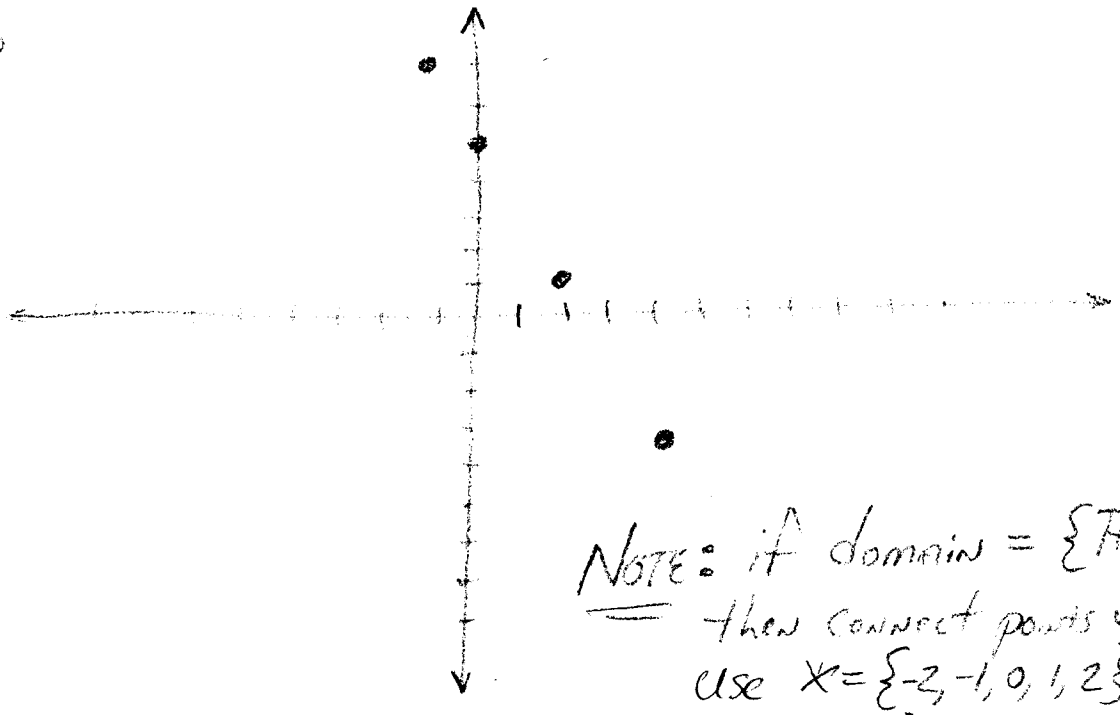
$$y = -2x + 5$$

⇒

X	$Y = -2x + 5$	(X, Y)
−1	$-2(-1)+5 = 2+5 = 7$	(−1, 7)
0	$-2(0)+5 = 5$	(0, 5)
2	$-2(2)+5 = 1$	(2, 1)
4	$-2(4)+5$ $-8+5 = -3$	(4, −3)

domain RANGE

⇒



NOTE: if domain = {ℝeals} then connect points with line.
use $X = \{-2, -1, 0, 1, 2\}$ if NONE given.

Homework:

Page 215 # 33, 34, 35, 36

- use domain given ⇒ ooo points
- Assume domain is {All Reals} ⇒ line

Use y T g method.