2-23-2016

FACTORING:

$b^3 + b^2 = b(\quad + \quad)$

$\underline{b}\cdot b\cdot b + \underline{b}\cdot b = b(b\cdot b + b) = b(b^2 + b)$

$b(b^2+b) = b^1(b^2 + b^1) = b^1 b^2 + b^1 \cdot b^1$

$= b^3 + b^2$

$b^3 + b^2 = b^2(\quad + \quad)$

$\underline{b}\cdot\underline{b}\cdot b + \underline{b}\cdot\underline{b}\cdot 1 = b\cdot b(b + 1) = b^2(b+1)$

$b^2(b^1 + b^0)$

$= b^{2+1} + b^{2+0} = b^3 + b^2$

METHOD 1

$10^4 + 10^2 = 10^2(\quad + \quad)$

$\underline{10}\cdot\underline{10}\cdot 10\cdot 10 + \underline{10}\cdot\underline{10} = \underline{10}\cdot\underline{10}(10\cdot 10 + 1)$

$= \boxed{10^2(10^2+1)}$

METHOD 2

$10^4 + 10^2 = 10^2(10^{\square} + 10^{\triangle}) = 10^2(10^2 + 10^0)$

$10^4 + 10^2 \quad 10^2\cdot 10^{\square} + 10^2\cdot 10^{\triangle}$

$4 = 2 + \square \quad \boxed{2} \qquad 2 = 2 + \triangle \quad \triangle = 0$

METHOD 3

$$10^4 + 10^2 = 10^2(10^{\_} + 10^{\_}) = \boxed{10^2(10^2+1)}$$

(annotations above the blanks: 2, 0)

$$\frac{10^4}{10^2} + \frac{10^2}{10^2} = \frac{10^2}{10^2}(10^{\_} + 10^{\_})$$

$$10^2 + 10^0 = 1 \cdot (10^{\_} + 10^{\_})$$

EXAMPLE:

$$ab \cdot c^2 + a^2 b \cdot c = a \cdot c(\quad + \quad)$$

$$a \cdot b \cdot c \cdot c + a \cdot a \cdot b \cdot c = a \cdot c(\quad + \quad)$$

$$= a \cdot c(bc + ab)$$

EXAMPLE:

$$10^3 + 10 = 10^2(\quad + \quad)$$

- $10^3 + 10^1 = 10^2(10^{\square} + 10^{\triangle}) = \boxed{10^2(10^1 + 10^{-1})}$

$3 = 2 + \square$ $\quad \boxed{1}$

$10^1 = 10^2 \cdot 10^{\triangle}$

$1 = 2 + \triangle$ $\quad \triangle = -1$

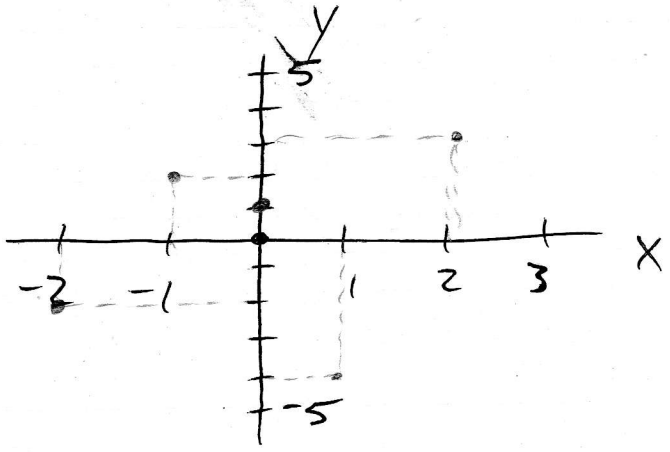
- $\frac{10^3}{10^2} + \frac{10^1}{10^2} = \frac{10^2}{10^2}(10^{\_} + 10^{\_}) = \boxed{10^2(10^1+10^{-1})}$

$$10^1 + 10^{-1} = (10^{\_} + 10^{\_})$$

GRAPHING - A WAY TO VISUALIZE A MATHEMATICAL RELATIONSHIP (EQUATIONS)

GRAPH SOME POINTS

CARTESIAN AXES



2 VALUES:

(x, y)

ORDERED ~~PAIR~~ PAIR

OR

COORDINATES

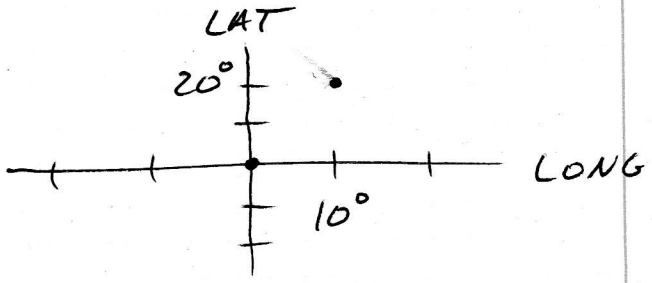
FOR EVERY ORDERED PAIR, THERE IS A CORRESPONDING POINT ON THE GRAPH.

- START AT ORIGIN (X=0, Y=0)
- MOVE RIGHT OR LEFT ~~FOR~~ BY X
- MOVE UP OR DOWN BY Y

(-1, 2) (2, 3) (-2, -2) (0, 1) (1, -4)

MAPPING:

(+10° ~~LAT~~ LONG, 20° LAT)



RELATION: ANY SET OF POINTS THAT ARE RELATED.
CAN BE DISCRETE OR CONTINUOUS
CAN BE FINITE OR INFINITE

FUNCTION: A RELATION THAT HAS THIS PROPERTY:
NO TWO DISTINCT PAIRS SHARE THE SAME 1st NUMBER.

BATTLESHIP

(3,4) MISS
(1,1) MISS
(3,2) HIT
(2,3) MISS
(4,2) HIT
(2,2) HIT
(1,2) HIT
(1,4) HIT
(2,4) MISS
(1,3) HIT

FUNCTION

RELATION, NOT A FUNCTION