Day 1

- Go over Sylabus
- Go over calander
  - Course entry quiz - 100% - first
  - Initial KC - locks every thing else out
  - C.A. pre assesment - in TC - 9-5 M-F
    - starts wednesday
    - due Aug 26
- Aleks is GB, ignore BB except attendance

Field Axioms

Aside: Group (a class on rubik's & uber, permutations) — if a square, then braiding strands

0) $a + 0 = a$

1) $(a+b)+c = a+(b+c)$ associativity
2) for all $a \in F$, there is $-a$ s.t. $a + -a = 0$ — ∃ of additive inverses
3) $a+b = b+a$ commutivity
4) $a \cdot b = b \cdot a$ " "
5) $(ab)c = a(bc)$ associativity of mult.
   Note $a \cdot b = ab = a \times b$

ring ($\mathbb{Z}/_{2\mathbb{Z}}$)
*6) $a(b+c) = ab + ac$ ~ distributive property
7) $a \cdot 1 = 1 \cdot a = a$

integral domain ($F[x]$, $\mathbb{Z}$)
9) if $ab = 0$ then either $a = 0$ or $b = 0$

Field ($\mathbb{Q}$, $\mathbb{R}$, $\mathbb{C}$, $\mathbb{R}(x)$)
10) for all $a \in F$, there is a^{-1} s.t. $aa^{-1} = 1 = a^{-1}a$.

Aside: From an integral domain D we may create a field by looking at $\frac{a}{b}$, $a, b \in D$, with $\frac{a}{b} \cdot \frac{c}{d} = \frac{ac}{bd}$ and $\frac{a}{b} + \frac{c}{d} = \frac{ad+bc}{bd}$ then canceling common factors.

Aside: Ex) $\mathbb{Z} \to \mathbb{Q}$, $\frac{6}{9} = \frac{2}{3}$; $\mathbb{R}[X] \to \mathbb{R}(X)$, $\frac{2x+4}{(x+2)} = 2$

Order of operations

In USA — also we use infix

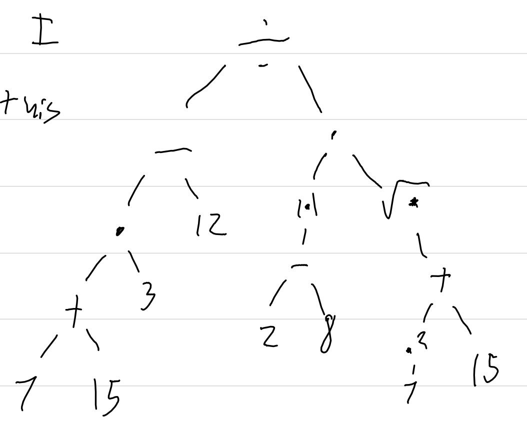
1. Parenthesis / absolute value
2. exponents
3. multiplication
4. division
5. addition
6. subtraction

Aside: polish uses prefix
ex
$\times + 3\ 2\ 4$
$= (3+2) \times 4$

ex ord ops) uses ops we will cover later

$$\frac{(7+15) \cdot 3 - 12}{|2-8| \cdot \sqrt{7^2+15}}$$

How I see this



Last ↑ First

- if time switch to Exponents — Review worksheet
  - make chart turning filled as go along — A1 1 Basics

wk 1 wednesday

Ann - TC opens Thursday

Content: - Mid 1.2, thru 1.3
Exponents + Factoring

- do 1.2, then have together work through BB sheet
if time, move to 1.3

Review / preview:

- Alg expr w/o neg exponent -70% rem
  - $-3m^{-5} = \frac{-3}{m^5}$

- 1.1 eqn -70%
  - $|4w+6| = 2$

$4w+6=2$	$4w+6=-2$
$4w=-4$	$4w=-8$
$w=-1$	$w=-2$

- Translating sentences into eqn's -57%
  - Three more than the quotient of a number and 4 is equal to 7.

- exponents multiplication -43%
  - $2y^5u^7 \cdot 8u^5 \cdot 2y$

wk 1 Friday

Flow: Generally wiki on Friday, starting in module 3 through.

Sodns: - Quiz 1 due Sunday - requires { hw ≥ 90% / course content quiz + I.K.C.
- C.A. preassessment due 26th - in TC,

Ann: on BB, Check out Note repository, its where I'll post notes,

(P) Review:

① 1-1 eqn type 2 — 74% rem

$|2w+4| = 10$

② Sent → eqn — 61%

Six more than the product of a number and 8 becomes 9.

③ Simplify alg. expr'n — 38, 45, 45 %

$$\frac{45x^{-7}x^{5}}{(y^{-3}x^{4})^{-2}\cdot 5^{2}}$$

④ Intro to 1-1 eqn — 45 %

$-|v| = -8$

Content: Finish 1.2, do 1.3

Wk 2 Monday

Due: C.A. Preassessment - in TC, today 9-6

Content 2.1 linear

(P)Review: (1) Solve $-3|4x+2| = -6x+3$ 45% mean

$|4x+2| = 2x-1$ Note $2x-1 \geq 0$ for inequality sense

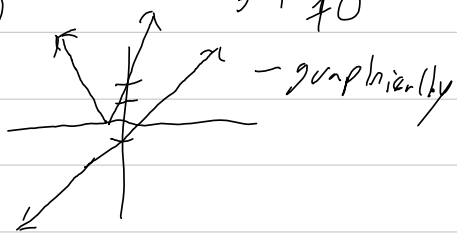
$4x+2 = -2x+1$ $\quad$ $4x+2 = 2x-1$

$6x = -1$ $\quad$ $2x = -3$

$x = -1/6$ $\quad$ $x = -3/2$

Check: $-\frac{2}{6} - 1 \neq 0$ $\quad$ $-3-1 \neq 0$

No soln



- graphically

(2) Line through $(-2,-3)$ slope $-5/2$

$y-(-3) = -5/2(x-(-2))$

(3) // and $\perp$ to $y = -\frac{2}{7}x+1$ through $(-8,3)$

$m_0 = -2/7$ $\quad$ prop: $m_0 m_\perp = -1 \rightarrow m_\perp = \frac{-1}{m_0}$

$m_{//} = -2/7$ $\quad$ $m_\perp = 7/2$

//) $y-3 = -\frac{2}{7}(x+8)$

$\perp$) $y-3 = 7/2(x+8)$

4) Line through $(-1,2)$ and $(-4,7)$

$m = \frac{\Delta y}{\Delta x} = \frac{2-7}{-1+4} = \frac{7-2}{-4+1} = \frac{-5}{3}$

$y-2 = -5/3(x+1)$

Goto: BB 1.36 (Set = to 0 and explain answers), L2.d1a L2.d1b L2.d2 — BB