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Welcome To Math 34A!
Differential Calculus

Instructor:
Trevor Klar, `trevorklar@math.ucsb.edu`

South Hall 6431X (Grad Tower, 6th floor, blue side, first door on the right)

Office Hours:
MTWR after class 2:00-3:00, and by appointment. Details on Gauchospace.

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Math 34A is about. . .

- Problem-solving using reasoning, algebra and arithmetic
- Turning English into Math (and vice versa)

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- Problem-solving using reasoning, algebra and arithmetic
- Turning English into Math (and vice versa)

Math 34A is not about. . .

- Memorizing formulas
- Rote computations

Here's a blog that explains this point well.
Math with Bad Drawings: Just Memorizing
Thankfully, we don't make very good robots.

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Do You Have the iClicker app?

A = Yes, B = No

To join the class, you can go to `https://join.iclicker.com/D7Q6X`

Everything Is On GauchoSpace

See https://gauchospace.ucsb.edu/

- Syllabus

- Homework:
    - On WeBWorK (link on GauchoSpace)
    - Assigned each class day, due following night at 11:59 PM
    - First one is today!

- Information about discussions and TAs

- Dates of midterm exams and final exam. (Once I decide them)

- Grading system

- Consider signing up with CLAS = Campus Learning Assistance Services – More info on Gauchocpase.

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Syllabus

Let's go over the Syllabus now

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  - Use reasoning, algebra and arithmetic.
  - This can get very difficult at times.
  - Memorizing formulas is tempting and seems easy, but it's actually harder long-term.
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- You should read the textbook!
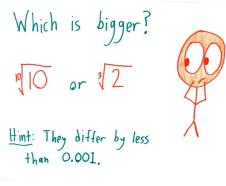
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  - Use reasoning, algebra and arithmetic.
  - This can get very difficult at times.
  - Memorizing formulas is tempting and seems easy, but it's actually harder long-term.
  - Word problems are the point.
- You should read the textbook!
  - It's quite good!
  - These lectures are not just presenting the textbook– they complement it.
  - Your homework problems are pulled from the textbook.
  - To be ready for exams you should follow both the textbook and the lectures.

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Example Puzzle

A New Favorite Puzzle

Which is bigger?

$$\sqrt[10]{10} \quad \text{or} \quad \sqrt[3]{2}$$

Hint: They differ by less than 0.001.

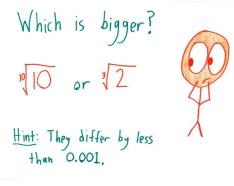*(From Math with Bad Drawings)*

Example Puzzle

A New Favorite Puzzle

(From Math with Bad Drawings)

<u>Idea</u>: The number $2^{10} = 1024$ is often approximated to a "rounder" number to convey sizes with computer hardware.

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Another Warm-up Puzzle

I was born on the second day
  of the last week
    of the second to last month
      of the last year
        of the second to last decade
          of the last century
            of the second millennium
              of our calendar system.

What is my birthdate?

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Let's Get Started!

1. Solve for x: $4x + 7 = 12$

$A = 3 \qquad B = 6 \qquad C = 5/4 \qquad D = 19/4 \qquad E =?$

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Answer: $\boxed{C}$

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Answer: $\boxed{C}$

2. Solve for x: $ax + b = c$.

$$A = c/a \qquad B = bc/a \qquad C = (c+b)/a \qquad D = c-b/a \qquad E = (c-b)/a$$

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Answer: $\boxed{\text{E}}$

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More Problems!

3. Solve for x: $2x + 7 = ax + k$

$$A = (2 - k)/(a - 7) \qquad B = (k - 7)/(2 - a)$$

$$C = (k - 7)/(a - 2) \qquad D = k - 7/a - 2 \qquad E = ?$$

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Answer: $\boxed{B}$

More Problems!

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Answer: $\boxed{B}$

4. Expand: $(1 - x)(1 + x + x^2)$

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More Problems!

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$$C = (k - 7)/(a - 2) \qquad D = k - 7/a - 2 \qquad E = ?$$

Answer: $\boxed{B}$

4. Expand: $(1 - x)(1 + x + x^2)$

Moral: Parentheses are awesome!