Welcome to Calculus MA 131

Review and difference equations

August 17, 2016

Fractions, percentages and decimals

1. Simplify: $\frac{3}{5} - \frac{4}{3}$
2. Simplify: $\frac{x}{yz} + \frac{y}{z}$
3. Simplify: $\frac{1+\frac{3}{2}}{\frac{3}{4}-1}$

4. Simplify: $\frac{3}{4(x+1)} - \frac{7}{2(x-1)}$
5. Solve for x: $\frac{10}{x} = \frac{6}{x+2}$
6. Write as a fraction: 6%

1. Evaluate the function
   $f(x) = 2x^2 - 3x$ at -2.

Functions and Intervals

1. Evaluate the function $f(x) = 2x^2 - 3x$ at -2.

2. Graph the interval $(2, \infty)$

3. Graph the interval $(-\pi, 10]$.

4. Determine the x and y intercepts of $y = 2x - 6$

5. Determine the x and y intercepts of $y = x^2 - 5x + 6$

Example: Difference Equations

Suppose you have $100 in a saving account which earns 4% interest, compounded anually. How much money will be in your account at the end of the first, second, and third years?

Question

Write a recursive formula for the amount of money in the account after n years.

Example

Suppose that you take out a loan to buy a car. You borrow $5000 at a 12% interest rate, compounded monthly, and you have payment schedule of $200 a month.

Question

Write a recursive formula for the amount of money you owe after n months.

Suppose you take out a loan for your text books. It's a loan for $600 dollars and it has a ridiculously high interest rate of 20%, compounded monthly.

- Give the difference equation that describes your loan.
- Write down the values for a and b.