Due at the beginning of class Monday, November 7. Write your solutions on separate paper (no ragged edges, please) with multiple pages stapled. Have it ready to turn in at the beginning of class.

1. Use a common denominator to add or subtract the fractions.
   Simplify the answer by combining like terms in the numerator.
   Leave the denominators in factored form (don't expand them).
   Study the links and the solutions from the last Skill set, if you need some review.

   a. $60x + \dfrac{2000}{x}$

   b. $\dfrac{1}{2(x+1)} - \dfrac{1}{2(x-1)}$

   c. $4\pi x - \dfrac{2000}{x^2}$

   d. $\dfrac{1}{3(x-1)} + \dfrac{1-x}{3(1+x+x^2)}$

2. Use derivative rules to find the derivative of each polynomial with respect to x.

   a. $2400x - 2x^2$

   b. $\frac{1}{5}x^5 - x - 1$

   c. $x^{10} - 55x^9 + 1320x^8$

   d. $\frac{1}{2}x(x+1)$ (Either use the product rule, or expand before differentiating)

   e. $ax^3 + bx + c$ (Treat a, b, and c as constants with respect to x)

3. First rewrite, then find the derivative with respect to t.
   Refer to §4.2 for similar examples.
   You don't need the quotient rule for any of these.

   a. $\dfrac{t}{4}$

   b. $\dfrac{4}{t}$

   c. $\dfrac{7}{3t^5}$

   d. $2\sqrt{t}$

   e. $\dfrac{11}{13\sqrt{t}}$

4. Solve to find the zeros of each rational function.
   (No calculus involved – no derivatives – just algebra)

   a. $\dfrac{(2x-1)(2x-3)}{(1-x)^2}$

   b. $\dfrac{(1-x^2)}{(1+x^2)^2}$

   c. $\dfrac{4x^2 - 7x + 3}{3(x^2 + 6x + 9)}$