Calculus: Homework
1/8-1/12

due: Tuesday:

1. pp. 402-403 / #13, 15, 17, 20, 21, 22, 23, 24
2. Evaluate: $\int (sin^2 x + cos^2 x) dx$

Wednesday: read pp. 332-334

1. Pg. 340 / #26, 29, 39
2. Find the general solution of each differential equation:
   a. $\frac{dy}{dx} = 5 - 3x$ b. $\frac{dy}{dx} = x(x^2 - 1)^4$
3. If a function has the properties $f'(x) = 4x + 1$ and $f(1) = 3$, find $f(2)$.
4. If $\frac{dy}{dx} = 3x^2$ and $y = 3$ when $x = 2$, find y when $x = 3$.

Thursday: read pp. 333-335

1. Pp. 340-341 / #37, 46
2. A particle moves along the x-axis so that at time $t \geq 0$ its acceleration is given by $a(t) = 6t + 6$. At $t = 0$, the velocity of the particle is -9 and its position is -27.
   a. Find $v(t)$, the velocity of the particle at any time $t \geq 0$.
   b. For what values of $t \geq 0$ is the particle moving to the right?
   c. Find $x(t)$, the position of the particle at any time $t \geq 0$.

on: Friday: test