Calculus II - Fall 2014 - Mr. Clontz - Quiz 11
Fill in the circle with the correct answer for each of the following problems.

Name: _____ 9am / 10am

1. (10 points) Give the work done by a force $F(x) = 3x^2 - 2x$ from $x = 0$ to $x = 2$.
   - ◯ 0 units
   - ◯ 2 units
   - ◯ 4 units
   - ◯ 8 units
   - ◯ None of these

2. (10 points) Give an integral which evaluates to the work done in hoisting a 40 foot cable dangling from the top of a building, if the cable weighs 5 pounds per foot.
   - ◯ $\int_0^{40} 200 - 5x\,dx$ ft-lbs
   - ◯ $\int_0^{40} 5x\,dx$ ft-lbs
   - ◯ $\int_0^{5} 40x\,dx$ ft-lbs
   - ◯ $\int_0^{1} 40x^2 - 5x\,dx$ ft-lbs
   - ◯ None of these

3. (10 points) Give an integral which evaluates to the arclength of the curve $y = \ln|\sec x|$ from $x = 0$ to $x = \frac{\pi}{4}$
   - ◯ $\int_0^{\pi/4} \tan(x)\,dx$
   - ◯ $\int_0^{\pi/4} \frac{1}{\sqrt{1+\tan x}}\,dx$
   - ◯ $\int_0^{\pi/4} \sqrt{1+\sec^2(x)}\,dx$
   - ◯ $\int_0^{\pi/4} \sec(x)\,dx$
   - ◯ None of these