Your name: _____

MTH 132-020 **Calculus I** **F18**

Quiz 12
Show all you work
Take-Home
due 12/7/18 at 10:20AM

1. Compute the following (definite or indefinite) integrals:

(a) $\int_{-1}^{2} x^7\sqrt{x^4+1}\,\mathrm{d}x$. *Do not simplify*

(b) $\int_{-3}^{3} \sin^{99}(x)\,\mathrm{d}x$.

(c) $\int \sec^2(x)\tan^5(x)\,\mathrm{d}x$.

2. Compute the area of the region between the curves $y = x^3 - 4x^2 + 4x$ and $y = 2x^2 - 4x$ from $x = -1$ to $x = 4$.

3. Find the area of the region enclosed by the curves $y^2 + x = 12$ and $y^2 = 2y + x$.

4. Find the positive number a such that the area of the region enclosed by the parabolas $y = 2ax - x^2$ and $y = x^2$ is equal to 9.