

Show all work and circle/box your final answer. All answers must be simplified unless stated otherwise. If you finish early, you may leave with my approval.

1. (0 points) Evaluate the following integrals:

(a) $\int \frac{1 + 2t^3}{4t^2} dt$

(b) $\int \left(4x^7 - 2x^2 + \frac{12}{x^4} \right) dx$

2. (0 points) The slope of the tangent line to a curve is given by $f'(x) = 6x^2 - 4x + 3$. If the point $(0, 1)$ is on the curve, find an equation of the curve.

3. (*0 points*) Approximate the area under the graph of $f(x) = x^2$ and above the x -axis from $x = 1$ to $x = 5$ using the following methods with $n = 4$. (a) Use left endpoints. (b) Use right endpoints. (c) Average the answers in parts a and b. (d) Use midpoints.