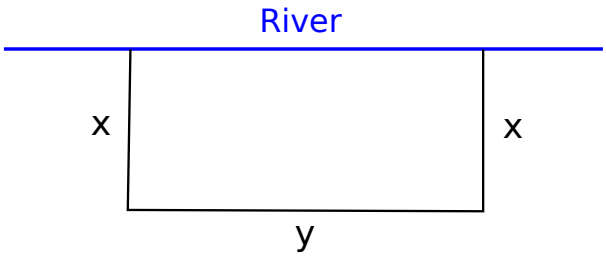
Math 241 Fall 2018 Professor MG
Classwork 7 Name: _____

Show all work and circle/box your final answer. All answers must be simplified unless stated otherwise.

1. (*0 points*) A farmer has 2400 ft of fencing and wants to fence off a rectangular field that borders a straight river. He needs no fence along the river. What are the ***dimensions*** of the field that has the largest area?



2. (*0 points*) A farmer is constructing a rectangular pen with one additional fence across its width. Find the maximum area that can be enclosed with 2400m of fencing.

3. (*0 points*) Find the general antiderivative for the following functions

(a) $\dfrac{1+2t^3}{4t^2}$

(b) $4x^7 - 2x^2 + \dfrac{12}{x^4}$

4. (*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.

5. (*0 points*) Write the sum $\sum_{k=1}^{3} \frac{k-1}{k}$ without sigma notation. Then evaluate it.

6. (*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.