

University of Lethbridge
Department of Mathematics and Computer Science
MATH 1560 - Tutorial #11
Monday, March 26

Name: _____

Note: You may do this assignment as a group, if you wish, by listing additional names under the space above, up to a maximum of 3 students per group.

1. Evaluate the definite integral:

(a) $\int_0^{\pi/2} \cos(x) \, dx$

(b) $\int_0^2 (x^3 - 2x + 3) \, dx$

(c) $\int_0^3 x\sqrt{1+x} \, dx$

(d) $\int_0^1 x^2 \sin(x^3) \, dx$

2. Evaluate the integral $\int_0^2 |2x - 2| dx$.

Suggestion: either use properties of integrals to simplify, or sketch the graph and evaluate by interpreting the result as an area.

3. Find the area between the curves $y = 2 - x^2$ and $y = x^2$.

4. Calculate the indicated Taylor polynomial:

(a) Degree 5, for $f(x) = \cos(x)$, about $x = \pi/3$.

(b) Degree 2, for $f(x) = \sec(x)$, about $x = 0$.

5. Use the degree 3 Maclaurin polynomial for $f(x) = \sin(x)$ to approximate the value of $\sin(1)$.