

*University of Lethbridge*  
Department of Mathematics and Computer Science  
**MATH 2565 - Tutorial #2**  
Thursday, January 18

First Name: \_\_\_\_\_

Last Name: \_\_\_\_\_

Print your name clearly in the space above.

Complete the problems on the back of this page to the best of your ability. If there is a problem you especially desire feedback on, please indicate this.

It is recommended that you work out the details on scrap paper before writing your solutions on the worksheet.

Additional practice (don't include your solutions here):

1.  $\int \frac{x}{\sqrt{x^2 - 3}} dx$

4.  $\int \frac{1}{x^3 + 2x^2 + 3x} dx$

2.  $\int \frac{x^2}{\sqrt{x^2 + 4}} dx$

5.  $\int \frac{x + 7}{(x + 5)^2} dx$

3.  $\int \frac{7x - 2}{x^2 + x} dx$

6.  $\int \frac{9x^2 + 11x + 7}{x(x + 1)^2} dx$

Evaluate the following integrals:

1.  $\int x^2 \sqrt{1 - x^2} \, dx$

2.  $\int \frac{1}{(x^2 + 4x + 13)^2} \, dx$

3.  $\int \frac{7x + 7}{x^2 + 3x - 10} \, dx$

4.  $\int \frac{x^3}{x^2 - x - 20} dx$  (First do long division.)

5.  $\int \frac{2x^2 + 2x + 1}{(x + 1)(x^2 + 9)} dx$

6.  $\int \frac{1}{\sqrt{x} + \sqrt[3]{x}} dx$

7. (Skip, or do on the back if you really want to.)  $\int_0^{\pi/2} \frac{\cos(x)}{2 - \cos(x)} dx$