*University of Lethbridge*
Department of Mathematics and Computer Science

**MATH 1565 - Tutorial #7**

Print your name and student number 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 this page.

[5] 1. Find the equation of the tangent line at the point $(1, 1)$ for the curve

$$(x^2 + y^2)^2 = 4xy.$$

[2] 2. The function $f(x) = \dfrac{1}{x^2 + 1}$, with domain $[0, \infty)$, is one-to-one. Compute the value of $(f^{-1})'(1/2)$.

Hint: It is not necessary to find $f^{-1}(x)$. Note that $f(1) = 1/2$.

[3] 3. Compute the derivative of $f(x) = \tan^{-1}(x^3)$, and $g(x) = \cosh^{-1}(x)$. (For $g(x)$, see handout.)