

# Math 2143 - Brief Calculus with Applications

Homework #6 - 2008.02.21

Due Date - 2008.02.28

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

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1. Factor out at least one term from each of the following expressions.

a)  $x^6 - 2^6$

b)  $3^8 - x^4$

c)  $a^7 - 128c^7$

d)  $\frac{1}{t^3} - x^3$

2. Expand the following expressions completely.

a)  $(a + b)^8$

b)  $(3 + \frac{1}{x})^5$

c)  $(3 - \frac{1}{x})^5$

d)  $(\frac{2}{a} + \frac{b}{3})^4$

3. Find an equation of the tangent line to the graph of  $f(x) = x^3 + 2x - \frac{3}{\sqrt{x}}$  at  $x = 1$ .