# Math 202-Section 11 Quiz 5

Sr. Num.: ID. Num.: Name:

Q 1: [5 points] Solve the differential equation:

$$\frac{d^3x(t)}{dt^3} - x(t) = 0.$$

Q 2: [5 points] Use the undetermined coefficients(annihilator) method to solve the ordinary differential equation:

$$y'' - y = \sinh(2x).$$

Q 3 [5 point]: The auxiliary equation of a 7'th-order linear, homogeneous DE with real coefficients has the following roots: $m_1 = -3$, $m_2 = 0$ of multiplicity 2, and $m_3 = 1 - 2i$ of multiplicity 2.

(1) Find the general solution of the DE.

(2) Find a fundamental set of solutions for the DE.