Assignment 13 – All 2 parts – Math 242

Due Friday, May 8, 2015

These exercises are taken from the textbook (Hass, Weir, and Thomas' *University calculus alternate edition*).

Section 16.2: $2, 4, 6, 12, 16, 18, 20$

Section 17.1: $2, 4, 16, 18, 22, 24, 42, 46$

(1) Assume $b^2 - 4ac = 0$. If r is the (only) root of the equation $ar^2 + br + c = 0$, show that $y(x) = xe^{rx}$ is a solution to $ay'' + by' + cy = 0$ (where a, b, and c are constant). (Hint: remember that the unique root is $r = -b/2a$ and $b^2 - 4ac = 0$.)