

TMATH 124: Quiz 5

You may use any work of yours that you made from last week. This includes, practice book problems and worked out WebAssign problems. This *does not* include photocopies of notes from the book or tutorials shown on WebAssign. Graphing calculators are also not allowed. In short, you are only allowed to use *work* that you created.

Show *all* your work (numerically, algebraically, or geometrically) for each and simplify. No credit is given without supporting work.

1. [2 each] Differentiate each of the following. Please do *not* simplify for this problem.

$$y = \log_2(1 - 3x)$$

$$y = x^x$$

2. [3] Find an equation of the tangent line to the curve $y = x^2e^{-x}$ when $x = 1$.

3. [3] Each side of a square is increasing at a rate of 6 cm/s. At what rate is the area of the square increasing when the area of the square is 16 cm²?