

MATH 170 – Section 009 – Quiz 10

You may work with other class members on this quiz, but you may *not* receive assistance from people not in MATH 170 (Section 009). You must show all of your work to receive full credit. Do all your work on other sheets of paper and be sure to staple all the pieces of paper together or YOU WILL GET A 'ZERO' ON THE QUIZ. Do not use decimal approximations unless asked to do so. Your work on this quiz must be handed in by Thursday, 17 November 2005 at 1900. GOOD LUCK!

- 1) Use Newton's method to approximate the solution of the equation

$$e^x = -x.$$

Use the Maple script to perform your calculations. Stop when two successive iterates look identical.

- 2) Use Newton's method to find the point on the graph of

$$y = \sqrt{x}$$

that is closest to the point $(1, 2)$. As above, use the Maple script to perform your calculations and stop when two successive iterates look identical.

- 3) Find the most general antiderivative of

$$f(x) = \frac{6}{\sqrt[3]{x}} - \sin x + 5e^x + \frac{2}{x}.$$

- 4) A ball begins its vertical journey from the edge of the top of a building 640 feet above the ground and hits the ground 8 seconds later. We assume air resistance is negligible; thus the acceleration of the ball is due only to gravity and has a magnitude of $32 \frac{\text{ft}}{\text{sec}^2}$. What was the initial speed of the ball? Was the ball thrown upward, thrown downward, or simply released? Explain.