MATA32 – Winter 2010
Notes on the previous finals

NOTES ON THE 2007 FINAL:

Part A

#5 – $f^{(n)}(x)$ means the nth derivative of $f(x)$. For example, $f^{(2)}$ is the same thing as f''.

#9 – the problem means what you might guess: that for any a and b,

$$\int_a^b f(x)\, dx = \left(\frac{x+1}{x+2} + 3 \right) \Bigg|_a^b$$

#10 – $f(x)$ has a *point of inflection* at $x = a$ if $f''(a) = 0$.

Part B

#3(a) Assume the integral runs from $t = 2$ to $t = 5$. Also, here's a hint: expand the numerator and divide each term by the denominator individually.

#3(b) Hint: $x \ln x - x$ is an antiderivative of the function $\ln x$.

#8(b) – ignore!

more notes on next page...

NOTES ON THE 2008 FINAL:

Part A

#4 – this just means, find the antiderivative of $\dfrac{2e^{3x} + 1}{e^x}$

#7 – see the note for 2007, Part A #10 above.

#10 – see the note for 2007, Part A #5 above.

#11 – see the note for 2007, Part A #9 above.

#12 – ignore!

Part B

#8(a) – assume the integral is from $x = 1$ to $x = 2$ (this problem is tricky!)

#8(b) – ignore!