

# MAT136H1F – Quiz 3

TUT5101 – T5 (TA: A. Stewart)

Fall, 2014

FAMILY NAME: .....

GIVEN NAME: .....

STUDENT ID: .....

Mark your lecture and tutorial sections:

L0101 (morning)	L5101 (evening)	T0101 (M3)	T0102 (R4)	T5101 (T5)	T5201 (R5)
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You have 15 minutes to solve the problems. Each problem is worth 2 points. Good luck!

**Question 1.** Find a curve  $y = f(x)$  such that the integral  $\int_4^5 \sqrt{2 - 2x + x^2} dx$  is the arc length of the curve over some interval.

**Question 2.** Express the improper integral  $\int_0^\infty \frac{r}{e^r} dr$  in terms of limits and definite integrals according to its definition.

**Question 3.** Determine if  $\int_0^\infty \frac{r}{e^r} dr$  is convergent or divergent and evaluate if possible.