Name: _____

Section: _____

R·I·T School of Mathematical Sciences

23 - Introduction to Laplace Transforms

MATH 211

The improper integral

$$\int_a^\infty f(x)dx$$

can only be evaluated if interpreted in terms of limits. That is,

$$\int_a^\infty f(x)dx = \lim_{b\to\infty} \int_a^b f(x)dx$$

Evaluate, if possible, the following improper integral.

$$\int_1^\infty \frac{1}{x^2} \, dx$$

Use the table to find the transforms of the following functions.

1. $f(t) = 3t^4$

2. $g(t) = t^3 e^{3t}$

3. $h(t) = 4e^{-3t} \sin(\pi t)$

4. $m(t) = \begin{cases} 3 & t < 2 \\ 0 & t \geq 2 \end{cases}$

5. $f(t) = \delta(t - 6)$