MATH 1B Fall 2015
Section 12 Name: _____

Approximate integrals and improper integrals.

1. $\displaystyle\int_3^\infty \frac{1}{(x-2)^{3/2}}\,dx$

2. $\displaystyle\int_0^\infty \frac{1}{\sqrt[4]{x+1}}\,dx$

3. $\displaystyle\int_{-\infty}^\infty xe^{-x^2}\,dx$

4. $\displaystyle\int_0^3 \frac{1}{x^2-6x+5}\,dx$

5. $\displaystyle\int_0^1 \frac{e^{1/x}}{x^3}\,dx$

6.
(a) Find the approximations T_8 and M_8 of the integral $\int_0^1 \cos(x^2)$.

(b) Estimate the errors in the approximations of part(a) (Error bound).

(c) How large do we have to choose n so that the approximations of T_n and M_n in part(a) are accurate to within 0.0001.

7. State Simpson's rule for approximation and its error bound.