Name: Section: 11   12   13

1. Use integration by parts to evaluate the following integrals.

(a) $\displaystyle \int x \sin(3x) \ dx$

(b) $\displaystyle \int x^2 \ln x \ dx$

2. Use the methods we discussed in lecture to find the following limits.

(a) $\displaystyle\lim_{x\to\infty} \frac{2^x + 1}{3^x + 1}$

(b) $\displaystyle\lim_{x\to 0^+} (\ln x - \ln \sin x)$

(c) $\displaystyle\lim_{x\to 0^+} \left(1 + \frac{1}{x}\right)^x$