AP Calculus BC
Lesson 5.5 Integration Practice

1. Evaluate each indefinite integral WITHOUT your calculator, then use your calculator to check:

a) $\int 8r(r^2-1)^{1/3}\,dr$

b) $\int \frac{6x^3}{\sqrt[4]{1+x^4}}dx$

c) $\int x^{\ln 2-1}dx$

d) $\int \frac{x2^{\sqrt{x^2+1}}dx}{\sqrt{x^2+1}}$

e) $\int x^2\sqrt{x-2}dx$

f) $\int \frac{x}{\sqrt[3]{x+1}}dx$

g) $\int \sin^3 x\cos^2 x dx$

h) $\int \csc^4 x\cot^3 x dx$

2. Write three Riemann sums which approximate $\int_3^5 (2x+1)dx$ using n = 10 equal subdivisions. Use a) the right sum, b) the left sum and c) the midpoint sum.

3. Evaluate the definite integral WITHOUT your calculator, then use your calculator to check.

a) $\int_{-\pi/4}^{0} \tan x \sec^2 x dx$

b) $\int_{0}^{\pi/6} \frac{\sin(2x)dx}{\cos^3(2x)}$

c) $\int_{-\sqrt{3}}^{\sqrt{3}} \frac{4xdx}{\sqrt{x^2+1}}$