1. **Recognizing Integrals.** Write down the method you would use to evaluate the integral but do not evaluate. Be descriptive enough to ensure the integral will be relatively easy for you to complete once your method is applied.

   (a) $\int \sin^3 x \cos^3 x \, dx$

   (b) $\int \ln x \, dx$

   (c) $\int \sqrt{4x^2 - 1} \, dx$

   (d) $\int \frac{dx}{(x+2)^3}$

   (e) $\int x \sec^2 x \, dx$

   (f) $\int \frac{dx}{\sqrt{9 - x^2}}$

2. **Integration by Parts Practice.**

(a) $\int \arcsin x \, dx$

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

(c) $\int 5^x \sin x \, dx$

(d) $\int x^3 e^{x^2} \, dx$

3. **Trig Integral Practice.**

(a) $\int \tan^2 x \sec x \, dx$

(b) $\int \sec^3 x \, dx$

(c) $\int \cos^4 3x \, dx$

(d) $\int \sin 2x \cos 4x \, dx$

4. **Trig Sub Practice.**

(a) $\displaystyle\int \frac{x^2}{(x^2-4)^{3/2}}dx$

(b) $\displaystyle\int \frac{dy}{y^2\sqrt{5-y^2}}$

(c) $\displaystyle\int \frac{dx}{\sqrt{x+x^2}}$

(d) $\displaystyle\int \frac{dt}{t\sqrt{t^2-5}}$

(e) Find the value $x = c$ such that the vertical lines $x = c$ and $x = -c$ divide the circle $x^2 + y^2 = 81$ into equal thirds.