Extra Credit 1 - due 5/13/19

1) $\int \frac{2x+3}{x^2+3x+2}\,dx$

2) $\int x^5 \ln x\,dx$

3) $\int \sin^6\theta \cos\theta\,d\theta$

4) $\int \sin(6\theta)\cos\theta\,d\theta$

5) $\int x^4 e^{7x}\,dx$

6) $\int \frac{1}{\sqrt{36-x^2}}\,dx$

7) $\int \frac{(\ln x)^7}{x}\,dx$

8) $\int x\sqrt{x^2+81}\,dx$

9) $\int \frac{x^3-7x^2+2}{\sqrt{x}}\,dx$

10) $\int x(x^2-5)^2\,dx$

Extra Credit 2 - due 5/14/19

In 1-3, use substitution

1) $\int x^2\sqrt{7-3x^3}\,dx$

2) $\int x^3 e^{7-x^4}\,dx$

3) $\int \cos x \cdot \sin(\cos x)\,dx$

In 4-5 use table of integrals:

4) $\int \sin^3 x\,dx$

5) $\int e^{5x}\cos(3x)\,dx$

In 6 and 7, use parts (tabular)

6) $\int x^3 e^{5x}\,dx$

7) $\int x^8 \ln x\,dx$

In 8 and 9 use trig substitution

8) $\int \frac{1}{x^2\sqrt{25-x^2}}\,dx$

9) $\int \frac{1}{\sqrt{x^2+49}}\,dx$

Extra Credit Assignment 3 Due 5/16/19

Find each integral by the method indicated and check your answer by differentiating on 1, 2, and 4.

1) Partial Fractions: $\int \frac{1}{x^2-8x-20}\,dx$

2) Tabular: $\int x^2 \sin x\,dx$

3) Table of Integrals:

$$\int \sin(5x)\sin(3x)\,dx$$

4) Substitution:

$$\int x^2(x^3+5)^{20}\,dx$$

5) Trig Substitution

$$\int \frac{1}{(\sqrt{4-x^2})^3}\,dx$$

Extra Credit Assignment 4 Due 5/17/19

Solve each of the following by the method of your choice Then choose 3 of them to check by differentiation.

1) $\int \frac{x^5-7x^4+x^2}{x^3}\,dx$

2) $\int x(x^2+5)^2\,dx$

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

4) $\int \frac{5x+3}{x^2+7x+12}\,dx$

5) $\int x^3 e^{9x}\,dx$

6) $\int \frac{x^2}{\sqrt{9-x^2}}\,dx$