
Math 152 - Week-In-Review 5

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Evaluate the following integrals:

1. $\int \frac{\sqrt{x^2 - 4}}{x^4} dx$

2. $\int \frac{x^3}{\sqrt{x^2 + 4}} dx$

3. $\int \frac{x^2}{\sqrt{16-x^2}} dx$

4. $\int_0^{0.6} \frac{x^2}{\sqrt{9 - 25x^2}} dx$

5. $\int_0^2 \frac{dx}{(4x^2 + 9)^{3/2}}$

6. $\int_0^1 \frac{dx}{\sqrt{x^2 + 4x + 5}}$

7. $\int x^2 \sqrt{3 + 2x - x^2} dx$

8. Write out the form of the following partial decomposition fractions. Do not solve.

(a) $\frac{1 - x}{x^3 + x^4}$

(b) $\frac{x}{x^2 + x - 6}$

(c) $\frac{1 + 16x}{(2x - 3)(x + 5)^2(x^2 + 4)}$

Evaluate the following integrals:

9. $\int \frac{5x + 1}{(2x + 1)(x - 1)} dx$

10. $\int_0^1 \frac{x^2 + x + 1}{(x + 1)^2(x + 2)} dx$