

# Math 2315 - Calculus 2

## Calculus 1 Review Questions Part 3 – Integration

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Find  $\frac{dy}{dx}$  for the following functions.

1.  $\int x^3 dx$

2.  $\int x^n dx$

3.  $\int x^3 - x^2 dx$

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

5.  $\int \frac{x^{1/3} - 3}{x^{2/3}} dx$

6.  $\int \sin(x) \cos(x) dx$

7.  $\int \frac{1 - \cos^2(x)}{\cos^2(x)} dx$

8.  $\int \sec^2(x) dx$

9.  $\int 2x \cos(x^2) dx$

10.  $\int x \sin(2x) + x^2 \cos(2x) dx$

11.  $\int \frac{2x(x^2 + 1) - x^2(2x)}{(x^2 + 1)^2} dx$