

I-A1

Evaluate each indefinite integral. Simplify answers when possible.

1. $\int \frac{3x^3 - x^4}{x^2} dx$

2. $\int -\cos(x) dx$

3. $\int x(2x + 1)^2 dx$

4. $\int \frac{1}{\sqrt[4]{x^7}} dx$

5. $\int 2e^x dx$

I-A2a

Multiple choice problems below. Show all work.

6.

$$\int x\sqrt{4-x^2} dx =$$

(A) $\frac{(4-x^2)^{3/2}}{3} + C$

(B) $-(4-x^2)^{3/2} + C$

(C) $\frac{x^2(4-x^2)^{3/2}}{3} + C$

(D) $-\frac{x^2(4-x^2)^{3/2}}{3} + C$

(E) $-\frac{(4-x^2)^{3/2}}{3} + C$

7.

$$\int \frac{x dx}{\sqrt{3x^2+5}} =$$

(A) $\frac{1}{9}(3x^2+5)^{\frac{3}{2}} + C$

(B) $\frac{1}{4}(3x^2+5)^{\frac{3}{2}} + C$

(C) $\frac{1}{12}(3x^2+5)^{\frac{1}{2}} + C$

(D) $\frac{1}{3}(3x^2+5)^{\frac{1}{2}} + C$

(E) $\frac{3}{2}(3x^2+5)^{\frac{1}{2}} + C$