

Calculus Practice: First Fundamental Theorem of Calculus 4a

Evaluate each definite integral.

1) $\int_0^3 4(2x-4)^{\frac{1}{3}} dx$

- A) $-7\sqrt[3]{2} - 14 \approx -22.819$
 B) $\sqrt[3]{2} - 6\sqrt[3]{4} \approx -8.264$
 C) $3\sqrt[3]{2} - 7 \approx -3.22$
 D) $3\sqrt[3]{2} - 6\sqrt[3]{4} \approx -5.745$

3) $\int_{-7}^{-2} 3(2x+4)^{\frac{1}{3}} dx$

- A) $-\frac{45\sqrt[3]{10}}{4} \approx -24.237$
 B) $9\sqrt[3]{14} \approx 21.691$
 C) $-\frac{37\sqrt[3]{10}}{7} \approx -11.388$
 D) $-\frac{53\sqrt[3]{10}}{4} \approx -28.546$

5) $\int_{-3}^0 -(x+2)^{\frac{1}{3}} dx$

- A) $2\sqrt[3]{2} - 1 \approx 1.52$
 B) $\frac{6\sqrt[3]{4} - 7}{4} \approx 0.631$
 C) $\frac{-6\sqrt[3]{2} + 3}{4} \approx -1.14$
 D) $\frac{-6\sqrt[3]{2} + 1}{6} \approx -1.093$

7) $\int_0^3 3(x-3)^{\frac{1}{3}} dx$

- A) $-\frac{27\sqrt[3]{3}}{4} \approx -9.735$
 B) $-\frac{27\sqrt[3]{3}}{14} \approx -2.781$
 C) $\frac{35\sqrt[3]{4}}{2} \approx 27.78$
 D) $-3\sqrt[3]{3} \approx -4.327$

2) $\int_1^3 5(2x-4)^{\frac{1}{3}} dx$

- A) -1 B) 0
 C) $\frac{3}{2} = 1.5$ D) 1

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

- A) $\frac{3 - 6\sqrt[3]{2}}{4} \approx -1.14$
 B) $\frac{-1 - 2\sqrt[3]{2}}{4} \approx -0.88$
 C) $\frac{3 - 14\sqrt[3]{2}}{4} \approx -3.66$
 D) $\frac{5 - 6\sqrt[3]{2}}{7} \approx -0.366$

6) $\int_{-5}^{-2} -5(x+3)^{\frac{1}{3}} dx$

- A) $\frac{-15 + 30\sqrt[3]{6}}{4} \approx 9.878$
 B) $\frac{-15 + 30\sqrt[3]{2}}{4} \approx 5.699$
 C) $\frac{15 - 30\sqrt[3]{2}}{4} \approx -5.699$
 D) $\frac{-7 + 11\sqrt[3]{2}}{7} \approx 0.98$

8) $\int_{-4}^{-1} 4(2x+6)^{\frac{1}{3}} dx$

- A) $5\sqrt[3]{2} - 6 \approx 0.3$
 B) $6\sqrt[3]{12} - 3\sqrt[3]{7} \approx 7.998$
 C) $6\sqrt[3]{4} - 3\sqrt[3]{2} \approx 5.745$
 D) $6\sqrt[3]{4} - 9\sqrt[3]{2} \approx -1.815$

9) $\int_{-1}^2 e^{x-2} dx$

A) $\frac{-9e^3 + 5}{e^3} \approx -8.751$

B) $\frac{-e^3 + 9}{4e^3} \approx -0.138$

C) $\frac{e^3 - 1}{e^3} \approx 0.95$

D) $\frac{e^3 - 7}{e^3} \approx 0.651$

10) $\int_{-4}^0 2e^{x+1} dx$

A) $\frac{3e^4 + 5}{e^3} \approx 8.404$

B) $\frac{2e^4 - 12}{e^3} \approx 4.839$

C) $\frac{2e^4 - 2}{e^3} \approx 5.337$

D) $\frac{-e^4 + 1}{2e^3} \approx -1.334$

11) $\int_{-6}^{-4} \frac{5}{(2x+6)^3} dx$

A) $-\frac{5}{8} = -0.625$

B) $-\frac{5}{18} \approx -0.278$

C) $-\frac{1}{2} = -0.5$

D) $-\frac{5}{22} \approx -0.227$

12) $\int_{-2}^0 -e^{x+1} dx$

A) $\frac{-e^2 + 10}{e} \approx 0.961$

B) $\frac{e^2 - 1}{7e} \approx 0.336$

C) $\frac{3e^2 - 1}{4e} \approx 1.947$

D) $\frac{-e^2 + 1}{e} \approx -2.35$

13) $\int_{-2}^1 -\frac{5}{(2x-4)^3} dx$

A) $\frac{67}{256} \approx 0.262$

B) $\frac{75}{253} \approx 0.296$

C) $\frac{75}{256} \approx 0.293$

D) $\frac{14}{43} \approx 0.326$

14) $\int_1^3 -\frac{1}{(2x+2)^2} dx$

A) $-\frac{1}{16} \approx -0.063$

B) $-\frac{1}{8} = -0.125$

C) $-\frac{1}{7} \approx -0.143$

D) $\frac{1}{8} = 0.125$

15) $\int_{-1}^0 \frac{4}{2x-2} dx$

A) $6 \ln 2 - 2 \ln 4 \approx 1.386$

B) $6 \ln 12 - 2 \ln 11 \approx 10.114$

C) $10 \ln 2 + 6 \ln 4 \approx 15.249$

D) $2 \ln 2 - 2 \ln 4 \approx -1.386$

16) $\int_1^3 e^{2x-6} dx$

A) $\frac{6e^4 - 1}{3e^4} \approx 1.994$

B) $\frac{6e^4 + 9}{2e^4} \approx 3.082$

C) $\frac{e^4 - 1}{2e^4} \approx 0.491$

D) $\frac{11e^4 - 1}{2e^4} \approx 5.491$

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