



Definite Integrals

Chapter: Integral Calculus • Level ★★★ • Time: 30 min

SCORE

___ / 20

Name _____ Class _____ Date _____

AFTER THIS WORKSHEET YOU CAN

- ✓ Evaluate definite integrals using the Fundamental Theorem: $F(b) - F(a)$. ✓ Interpret a definite integral as signed area.
- ✓ Handle intervals that cross the x-axis. ✓ Compute simple definite integrals accurately.



Section A • Concept Check

• BEGINNER

$4 \times 1 = 4$

- 1 $\int$ from 0 to 2 of x^3 dx = ?
☐ A. 2 ☐ B. 4 ☐ C. 8 ☐ D. 16
- 2 $\int$ from 1 to 4 of 3 dx = ?
☐ A. 3 ☐ B. 9 ☐ C. 12 ☐ D. 4
- 3 Fundamental Theorem: $\int$ from a to b of f dx = ?
☐ A. $F(b) - F(a)$ ☐ B. $F(a) - F(b)$ ☐ C. $f(b) - f(a)$
☐ D. $F(b) + F(a)$
- 4 $\int$ from -2 to 2 of x dx = ?
☐ A. 0 ☐ B. 4 ☐ C. 8 ☐ D. -4



Section B • Problem Solving

• INTERMEDIATE

$2 + 3 \times 3 = 11$

- 5 FTC: $\int$ from a to b of $f(x)$ dx = _____
- 6 $\int$ from 0 to 2 of x^3 dx = _____
- 7 Evaluate $\int$ from 0 to 2 of x^3 dx.

- 8 Evaluate $\int$ from 1 to 4 of 3 dx.

- 9 Evaluate $\int$ from 0 to 1 of $(4x + 2)$ dx.



Section C • Challenge

• CHALLENGE

5

- 10 Evaluate $\int$ from -2 to 2 of x dx.

Reflection — the most useful thing I learned: _____

A ___/4 B ___/11 C ___/5 Total ___/20

Teacher's Signature

Parent's Signature

ANSWER KEY — FOLD OR CUT BEFORE HANDING OUT

1-B 2-B 3-A 4-A | 5 $F(b) - F(a)$ 6 4 7 = 4 8 = 9 9 = 4 | 10 = 0