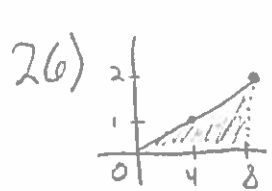
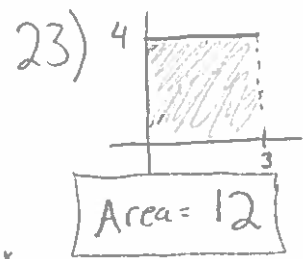


4.3 Properties of Definite Integrals

Pg. 273 #'s 13, 15, 23, 26, 39-41, 44, 47-49, 61-64

13) $\int_0^4 5 dx$

15) $\int_{-4}^4 (4 - |x|) dx = 2 \int_0^4 (4 - |x|) dx$



Area = $\frac{1}{2}(8)(2)$
Area = 8

39) $\frac{1}{2} \int_2^4 x^3 dx - 3 \int_2^4 x dx + 2 \int_2^4 dx$

$\frac{1}{2}(60) - 3(6) + 2(2)$

16

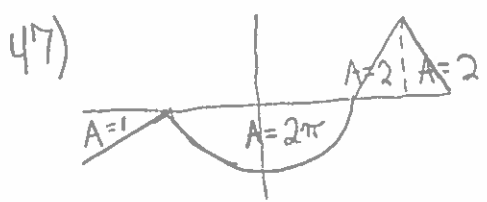
40) $10 \int_2^4 dx + 4 \int_2^4 x dx - 3 \int_2^4 x^3 dx$

$10(2) + 4(6) - 3(16)$

-4

41) a) 13 b) -10 c) 0 d) 30

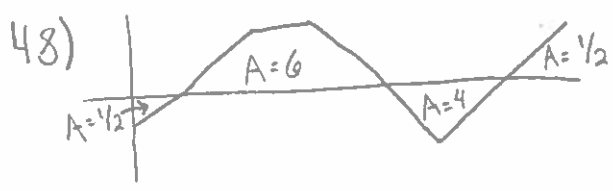
44) a) -5 b) 10 c) 0 d) 15



- a) $-\pi$
- b) 4
- c) $-1 - 2\pi$
- d) $3 - 2\pi$
- e) $5 + 2\pi$

f) $\int_{-4}^6 f(x) dx + \int_{-4}^6 2 dx$ ← Rectangle

$3 - 2\pi + (2 \times 10) = 23 - 2\pi$



- a) $\frac{1}{2}$
- b) 6
- c) 5
- d) -4
- e) 2
- f) -2

$$49) a) \int_0^5 f(x) dx + \int_0^5 2 dx$$

4 + 2(5)

14

$$b) \int_{-2}^3 f(x+2) dx = \int_0^5 f(x) dx = c) 8 \quad d) 0$$

4

$$61) \int_{\pi}^{2\pi} \sin x dx < 0$$

$$62) \int_0^{\pi} \cos x dx$$

63) True

64) False, integration of a product requires integration by parts or possibly u-substitution if $f'(x) = g(x)$.