

$$1 \quad x^2 - 4x \leftarrow 5 \quad \frac{d}{dx}$$

$$\int_3^5 x^2 - 4x^2 - 3x + 1 + C$$

$$(x^3 - 2x^2 - 3x + C)$$

$$\frac{5^3}{3} - 2(5)^2 - 3(5) - \left[\frac{3^3}{3} - 2(3)^2 - 3(3) - C \right]$$

$$\frac{125}{3} - \frac{225}{3} - \left[\frac{27}{3} - \frac{9}{3} \right] \rightarrow \frac{100}{3} + \frac{10}{3}$$

$$\int_5^{-4} -x + 2 \frac{d}{dx} - \frac{x^2}{2} + 2x + C$$

$$-\frac{5^2}{2} + 2(5) - \left[-\frac{(-4)^2}{2} + 2(-4) + C \right]$$

$$\frac{25}{2} + 10 - \left[\frac{16}{2} - 8 \right]$$

$$\frac{25}{2} + \frac{20}{2} - \left(\frac{16}{2} - \frac{16}{2} \right) = \frac{5}{2} - \left(\frac{32}{2} \right)$$

$$-\frac{5}{2} + \frac{32}{2} = \frac{27}{2}$$

$$\int_0^{-4} (x^2 + 8x + 12) \frac{d}{dx}$$

$$x^3 + \frac{8x^2}{3} + \frac{8x^2}{2} + 12x + C$$

$$\frac{x^3}{3} + 4x^2 + 2x + C$$

$$\frac{(0)^3}{3} + 4(0)^2 - 12(0) - \left(\frac{-4}{3}\right) + 4(-4)^2 + 12 - 24$$

$$\left[\frac{-64}{3} + 64 - 48 \right]$$

$$-\frac{64}{3} + \frac{192}{3} - \frac{144}{3}$$

$$\left(\frac{+16}{3} \right)$$