

Solutions

Each answer shows the steps, then the **result**.

2.1

- $\left[\frac{1}{2}x^2\right]_0^4 = 8 - 0 = 8$

2.2

- $\left[x^4\right]_1^2 = 16 - 1 = 15$

2.3

- $\left[\sin x\right]_0^{\pi/2} = 1 - 0 = 1$

3.1 B

- by the FTC, $\int_a^b f' = f(b) - f(a)$

3.2

(a)

- $\left[t^3 - 4t\right]_0^8 = (8 - 8) - 0 = 0$

(b)

- The particle's **displacement** over $0 \leq t \leq 2$ is 0 — it returns to its start

3.3

- $\int_1^4 6t \, dt = \left[3t^2\right]_1^4 = 48 - 3 = 45 \text{ L}$