

$$*2) \int_0^2 [(2-t)\sqrt{t}] dt = \int_0^2 (2t^{1/2} - t^{3/2}) dt$$

$$= \frac{2t^{3/2}}{\frac{3}{2}} - \frac{t^{5/2}}{\frac{5}{2}} \Big|_0^2 = \frac{4}{3} t^{3/2} - \frac{2}{5} t^{5/2} \Big|_0^2$$

$$\left[\frac{4}{3} (2)^{3/2} - \frac{2}{5} (2)^{5/2} \right] - 0 = \frac{4\sqrt{8}}{3} - \frac{2\sqrt{32}}{5}$$

$$= \frac{4 \cdot 2\sqrt{2}}{3} - \frac{2 \cdot 4\sqrt{2}}{5} = \frac{5 \cdot 8\sqrt{2}}{5 \cdot 3} - \frac{8\sqrt{2}}{5} \cdot \frac{3}{3}$$

$$\frac{40\sqrt{2} - 24\sqrt{2}}{15} = \frac{16\sqrt{2}}{15}$$

$$3) \int_2^5 (-3x+4) dx = -\frac{3x^2}{2} + 4x \Big|_2^5$$

$$\left[-\frac{3(5)^2}{2} + 4(5) \right] - \left[-\frac{3(2)^2}{2} + 4(2) \right]$$

$$\left[-\frac{75}{2} + 20 \right] - \left[-6 + 8 \right]$$

$$-\frac{35}{2} - 2 \frac{4}{2}$$

$$= -\frac{39}{2}$$