

2310

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10:28

$$a) \int_0^4 \sqrt{2x+1} dx = \int_0^4 (2x+1)^{1/2} dx =$$

$$= \left[(2x+1)^{3/2} \cdot \frac{2}{3} \cdot \frac{1}{2} \right]_0^4 =$$

$$= \frac{1}{3} (9^{3/2} - 1) = \frac{26}{3}$$

$$b) \int_0^1 (x^2+1)^2 dx = \int_0^1 (x^4 + 2x^2 + 1) dx =$$

$$= \left[\frac{x^5}{5} + \frac{2x^3}{3} + x \right]_0^1 = \frac{1}{5} + \frac{2}{3} + 1 =$$

$$= \frac{28}{15}$$

$$c) \int_1^3 \frac{x+1}{x} dx = \int_1^3 \left(1 + \frac{1}{x}\right) dx =$$

$$= \left[x + \ln x \right]_1^3 = 3 + \ln 3 - 1 - \ln 1 =$$

$$= 2 + \ln 3$$

$$d) \int_0^{\pi/2} 8 \sin x \underbrace{\cos x}_{\text{derivatan av } \sin x} dx = \left[8 \cdot \frac{\sin^2 x}{2} \right]_0^{\pi/2} =$$

$$= 4 \left(\sin^2 \frac{\pi}{2} - \sin^2 0 \right) = 4$$