Answer on Question #50932, Math, Integral Calculus

$$\int_1^4 \left(x + \frac{1}{\sqrt{x}} \right) dx$$

Solution.

$$\int_1^4 \left(x + \frac{1}{\sqrt{x}} \right) dx = \int_1^4 x dx + \int_1^4 \frac{1}{\sqrt{x}} dx = \frac{x^2}{2}\Big|_1^4 + \frac{x^{-\frac{1}{2}+1}}{-\frac{1}{2}+1}\Big|_1^4 =$$

$$= \frac{4^2}{2} - \frac{1^2}{2} + \frac{4^{\frac{1}{2}}}{\frac{1}{2}} - \frac{1^{\frac{1}{2}}}{\frac{1}{2}} = 8 - \frac{1}{2} + \frac{2}{\frac{1}{2}} - \frac{1}{\frac{1}{2}} = 8 - \frac{1}{2} + 4 - 2 = 9{,}5.$$

Answer: $9{,}5$