

## Answer on Question #61838 – Math – Calculus

### Question

Integrate with respect to x :

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

### Solution

$$\int_1^4 \left( x + \frac{1}{\sqrt{x}} \right) dx = \left( \frac{x^{1+1}}{1+1} + \frac{x^{-\frac{1}{2}+1}}{-\frac{1}{2}+1} \right) \Big|_{x=1}^{x=4} = \left( \frac{x^2}{2} + 2\sqrt{x} \right) \Big|_{x=1}^{x=4} = \left( \frac{4^2}{2} + 2\sqrt{4} \right) - \left( \frac{1^2}{2} + 2\sqrt{1} \right) = 8 + 4 - \frac{1}{2} - 2 = 10 - \frac{1}{2} = \frac{10 \cdot 2 - 1}{2} = \frac{20 - 1}{2} = \frac{19}{2}.$$

**Answer:**  $\frac{19}{2}$ .