

$$\begin{aligned} (\S 5.3 \# 14) \quad \int_1^9 \frac{3x-2}{\sqrt{x}} dx &= \int_1^9 \left(\frac{3x}{\sqrt{x}} - \frac{2}{\sqrt{x}} \right) dx \\ &= \int_1^9 (3x^{1/2} - 2x^{-1/2}) dx \\ &= \left[3 \frac{x^{3/2}}{3/2} - 2 \frac{x^{1/2}}{1/2} \right]_1^9 \\ &= \left[2x^{3/2} - 4x^{1/2} \right]_1^9 \\ &= \left[2(9)^{3/2} - 4(9)^{1/2} \right] - \left[2(1)^{3/2} - 4(1)^{1/2} \right] \quad \star \\ &= \left[2((9)^{1/2})^3 - 4(3) \right] - [2 - 4] \\ &= [2(3)^3 - 12] + 2 \\ &= 54 - 12 + 2 \\ &= \boxed{44} \end{aligned}$$

Remark: the last 5 lines are just arithmetic which you really should understand, but I do allow a calculator so if you got to $\star$ correctly I gave full credit this time.

"Correctly" means that the following were in your solⁿ

- integral notation; the $\int$, the dx and bounds.
- equalities where things were equal
- clear progression of thought (not just random thoughts sprayed all over the solⁿ)
- most importantly for this problem, algebra and application of the evaluation Th^m (aka FTC).