

$$\lim_{x \rightarrow \infty} \int_2^3 \frac{1}{dx} dy$$

INTEGRATION BY TABLES AND OTHER INTEGRATION TECHNIQUES

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Problem 1:

Evaluate $\int x\sqrt{2x-1} dx$

Problem 2:

Evaluate $\int \frac{2x}{(x+1)^2} dx$

Problem 3:

Evaluate $\int \frac{dx}{\sqrt{4-x^2}}$

Problem 4:

Evaluate $\int \frac{dx}{2+9x^2}$

Problem 5:


Evaluate $\int \frac{dx}{x\sqrt{4x^2-9}}$

Problem 6:

Evaluate $\int \frac{dx}{\sqrt{e^{2x}-1}}$

Problem 7:

Evaluate $\int \frac{x+2}{\sqrt{4-x^2}} dx$



SOLUTIONS

You can find detailed solutions below the link for this problem set!

1.
$$F(x) = \frac{1}{10}(2x - 1)^{5/2} + \frac{1}{6}(2x - 1)^{3/2} + C$$

2.
$$F(x) = 2 \ln|x + 1| + 2(x + 1)^{-1} + C$$

3.
$$F(x) = \arcsin\left(\frac{x}{2}\right) + C$$

4.
$$F(x) = \frac{1}{3\sqrt{2}} \arctan\left(\frac{3x}{\sqrt{2}}\right) + C$$

5.
$$F(x) = \frac{1}{3} \arccos\left(\frac{2|x|}{3}\right) + C$$

6.
$$F(x) = \arccos(e^x) + C$$

7.
$$F(x) = -(4 - x^2)^{1/2} + \arcsin\left(\frac{x}{2}\right) + C$$