

QUIZ 12

1) Evaluate $\int 3e^x - 4\sec^2(x) + \frac{x^4-7}{x} dx$

2) Find $f(x)$ if $f''(x) = 6x - 2$, $f'(2) = 8$
and $f(-1) = 2$.

3) What do you most need to review for Exam 3?

SOLUTION

$$\begin{aligned} 1) \quad & 3 \int e^x dx - 4 \int \sec^2 dx + \int x^3 - \frac{7}{x} dx \\ & = 3e^x - 4 \tan(x) + \frac{1}{4} x^4 - 7 \ln|x| + C \end{aligned}$$

$$2) \quad f'(x) = \int 6x - 2 dx = \frac{6}{2} x^2 - 2x + C$$

$$f'(2) = 3(2)^2 - 2(2) + C = 8$$

$$12 - 4 + C = 8 \Rightarrow C = 0$$

$$f(x) = \int 3x^2 - 2x dx = x^3 - x^2 + D$$

$$f(-1) = (-1)^3 - (-1)^2 + D = 2$$

$$-1 - 1 + D = 2 \Rightarrow D = 4$$

$$\boxed{f(x) = x^3 - x^2 + 4}$$