

I. EVALUATE EACH INTEGRAL

1. $\int \tan(x) \sec^3(x) dx$ 2. $\int -8x \sin(x) dx$ 3. $\int \cos^2(3x) dx$

4. $\int \frac{x^3}{\sqrt{16-x^2}} dx$ 5. $\int \frac{-2x^2-12}{x^3-x^2-6x} dx$ 6. $\int \sec^4(x) dx$

7. $\int \frac{3x^2+2x+27}{x^3+9x} dx$ 8. $\int \frac{4x}{(4+x^2)^2} dx$ 9. $\int_3^{12} \frac{1}{\sqrt{x-3}} dx$

10. $\int_1^{\infty} \frac{9}{x^4} dx$ 11. $\int_{-\infty}^1 2xe^{2x} dx$ 12. $\int_0^{\frac{\pi}{2}} \sec(x) dx$

II EVALUATE EACH LIMIT.

13. $\lim_{x \rightarrow 0} \frac{4x}{\tan^{-1}(x)}$ 14. $\lim_{x \rightarrow 0} \frac{e^{2x} + x - 1}{x^2 - 2x}$ 15. $\lim_{x \rightarrow 0^+} x^{(x^2)}$