

REVIEW OF INTEGRALS

Evaluate the following integrals.

1. $\int 5x^3 - \frac{3x}{4} + \frac{2}{x} - 7 \cos 2x \, dx$

2. $\int x^3 r^4 \, dx$

3. $\int x^3 r^4 \, dr$

4. $\int \cos^5 3x \sin 3x \, dx$

5. $\int \sec^7 x \tan x \, dx$

$$6. \int \tan x \, dx$$

$$7. \int (\cos x) e^{7-\sin x} \, dx$$

$$8. \int \frac{-\sec 4\theta \tan 4\theta}{3 + \sec 4\theta} \, d\theta$$

$$9. \int \sin \theta \cos (\cos \theta) \, d\theta$$

$$10. \int \frac{e^{\sqrt[3]{x}}}{\sqrt[3]{x^2}} \, dx$$

11. $\int \frac{2x + 3}{x^2 + 4} dx$

12. $\int \frac{x}{\sqrt{1 - x^4}} dx$

13. $\int \frac{\sin \theta}{1 + \cos^2 \theta} d\theta$

14. $\int \frac{1}{x (\ln x)^4} dx$

15. $\int \frac{x+2}{25x^2+1} dx$

16. $\int x\sqrt{x-1} dx$

17. Find the following definite integrals.

(a) $\int_{1/6}^{1/3} \frac{2}{\sqrt{1-9x^2}} dx.$

(b) $\int_1^4 \frac{2t^2 + \sqrt{t^3} - 3}{t^2} dt$