Name:

AP Physics C
M. Lam

Definite Integrals

Block:

Evaluate each definite integral.

1. $\int_1^2 5\,dx$

2. $\int_0^{10} 2x\,dx$

3. $\int_{-2}^2 12x^2\,dx$

4. $\int_{-2}^2 12x^3\,dx$

5. $\int_{-1}^3 \left(-x^3+3x^2+1\right)\,dx$

6. $\int_{-2}^1 \left(x^4+x^3-4x^2+6\right)\,dx$

7. $\int_{-3}^0 4x^{\frac{1}{3}}\,dx$

8. $\int_1^4 -\frac{4}{x^3}\,dx$

9. $\int_2^4 \left(-\frac{3}{x^3}+\frac{2}{x^2}-\frac{1}{x}\right)\,dx$

10. $\int_1^8 -\frac{4}{5}\sqrt[3]{x}\,dx$

11. $\int_0^2 2e^x\,dx$

12. $\int_0^{\frac{\pi}{2}} \cos x\,dx$

13. $\int_0^{2\pi} \cos x\,dx$

14. $\int_{-3}^{-1} \frac{4}{x}\,dx$

15. $\int_{-\frac{\pi}{4}}^{-\frac{\pi}{6}} 2\sin x\,dx$

16. $\int_{\pi}^{2\pi} \frac{\sin x}{4}\,dx$

17. $\int_0^1 \left(\frac{\sqrt{x^5}}{2}-e^x\right)\,dx$

18. $\int_{\frac{\pi}{3}}^{\pi} 3\left(\cos x-\sin x\right)\,dx$

19. $\int_{-\pi}^{\pi} \left(x^2+\cos t-e^t\right)\,dx$

20. $\int_{-2}^{-1} \left(x^2+x+1+\frac{1}{x}+\frac{1}{x^2}\right)\,dx$