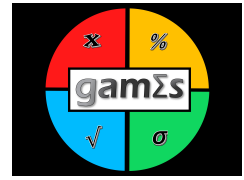


GAMES Practice Problem Solutions – Integration Part 2



- (a) $-3x - \frac{x^4}{4} - x^6 - \frac{3}{8}x^8 + C$
(b) $u(x) = \frac{(2-7x)^4}{28} + C$
(c) $v(x) = \frac{2x^3}{3} + \frac{3x^2}{2} + 3x + C$
(d) $w(x) = \frac{(4x+7)^{12}}{48} + C$
(e) $e^{3x}/3 + C$
(f) $\ln|x| - 6e^x + C$

2. Substitute $u = 6x$. Then $du = 6dx$.

$$\int 2^{6x} dx = \frac{1}{6} \int 2^u dx = \frac{1}{6} \frac{2^u}{\ln 2} + C = \frac{2^{6x}}{6 \ln 2} + C$$

3. $\frac{\ln(2z^2+8)}{4} + C$

4. $\ln |\ln(3x)| + C$

5. $\frac{2}{3}(e^t + 3)^{3/2} + C$

6. $\frac{1}{k-1} \int_1^k \frac{4}{x^2} dx = \frac{4}{k} = 2 \Rightarrow k = 2.$



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