

## The Integration Gateway Exam

Name, please:

Compute the following integrals. No calculators allowed. Do not simplify your answers. No partial credit; 6 out of 7 must be correct to pass. You have 20 minutes.

1)  $\int (v + 1)e^{2v} dv$

2)  $\int \frac{(\phi + 1) d\phi}{(\phi^2 + 2\phi + 5)^2}$

3)  $\int e^{3r} + 82^r dr$

4)  $\int \frac{\ln x}{x^2} dx$

5)  $\int \cos(w^3) du$

6)  $\int x^2 e^{x^3+1} dx$

7)  $\int_1^3 \frac{h^4 + 1}{h^2} - \frac{2}{h^4} dh$