

# Homework 4

Name:

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**P 1.** Let  $A$ ,  $B$ , and  $C$  be solutions to the following system of equations

$$\begin{cases} A + 2B + 3C = 24 \\ 2A - 3B + 5C = 36 \\ B + C = 42 \end{cases}$$

Find

$$\int e^{Bx} \sin(Cx) dx$$

**P 2.** Let  $p(x)$  be the quadratic irreducible factor of the polynomial  $x^4 - 19x^3 + 299x^2 + 19x - 300$ .  
Find

$$\int 3p(x) \cos 5x \, dx.$$