

YOUR NAME: \_\_\_\_\_

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Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Use **variation of parameters** to solve the following second-order nonhomogeneous linear differential equation:

$$y'' - 2y' - 15y = 45te^{2t}.$$

(Note that the differential equation can also be solved using undetermined coefficients, but we have already tried several problems using that technique.)