

Instructions: Show all work. Answers without work required to obtain the solution will not receive full credit. Some questions may contain multiple parts: be sure to answer all of them. Give exact answers unless specifically asked to estimate.

1. Use undetermined coefficients to find the general solution to $y'' + 4y = 5\sin(t)$.

2. Use variation of parameters to find the general solution to $y'' + 4y = 5\csc(2t)$.