

Show your work! Answers without supporting work will not be given credit. Print this assignment and write your work in the spaces provided.

1. Solve

$$\begin{aligned}y'' - 2y' + 5y &= 0 \\ y(\pi/2) &= 0 \\ y'(\pi/2) &= 2\end{aligned} .$$

2. Solve

$$\begin{aligned}y'' + 4y' &= 0 \\ y(0) &= 0 \\ y'(0) &= 1\end{aligned}$$

3. Solve

$$\begin{aligned}y'' + 4y &= 0 \\ y(0) &= 0 \\ y'(0) &= 1\end{aligned}$$

4. Give a fundamental set of solutions for $y'' - 2y' + y = 0$.

5. Use the method of undetermined coefficients to solve $y'' - 2y' - 3y = 3e^{2t}$.

$y_h =$

Guess =

$y_p =$

General Solution =

6. Solve $y'' + 2y' + 5y = 3 \sin(2t)$ using the method of undetermined coefficients.

$y_h =$

Guess=

$y_p =$

General Solution=

7. Use the method of undetermined coefficients to solve $y'' + 2y' + y = 2e^{-t}$.

$y_h =$

Guess=

$y_p =$

General Solution=

8. Solve $2y'' + 3y' + y = t^2 + 3\sin(t)$ using the method of undetermined coefficients.

$y_h =$

Guess =

$y_p =$

General Solution =