

ODE



1.

( 500 )





2.

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hho

%

%















( 250 )

1.

( , ). ?

[Faint, illegible text]

hho

[Faint, illegible text]

4).

[Faint, illegible text]

C

hho







7.

$y'' + 2y' + 2y = 0$

Characteristic equation:  $r^2 + 2r + 2 = 0$

$r = \frac{-2 \pm \sqrt{4 - 8}}{2} = \frac{-2 \pm \sqrt{-4}}{2} = \frac{-2 \pm 2i}{2} = -1 \pm i$

General solution:  $y = e^{-x} (C_1 \cos x + C_2 \sin x)$

Initial conditions:  $y(0) = 1, y'(0) = 0$

$y(0) = e^0 (C_1 \cos 0 + C_2 \sin 0) = C_1 = 1$

$y'(x) = -e^{-x} (C_1 \cos x + C_2 \sin x) + e^{-x} (-C_1 \sin x + C_2 \cos x)$

$y'(0) = -e^0 (C_1 \cos 0 + C_2 \sin 0) + e^0 (-C_1 \sin 0 + C_2 \cos 0) = -C_1 + C_2 = 0$

$-1 + C_2 = 0 \Rightarrow C_2 = 1$

Particular solution:  $y = e^{-x} (\cos x + \sin x)$

8.

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Particular solution:  $y = e^{-x} (\cos x + \sin x)$

9.

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10.

Perkins Performance,

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hho'

'U uoo'

'U

-u

'o

'o

'U uoo'

'U uoo'hho'









6.

?

hho

(EODM(#80-2P32%0AP%22A1%60%3)P06A

7.

$\text{hho}$

$\backslash$  -



( 250 )

1.

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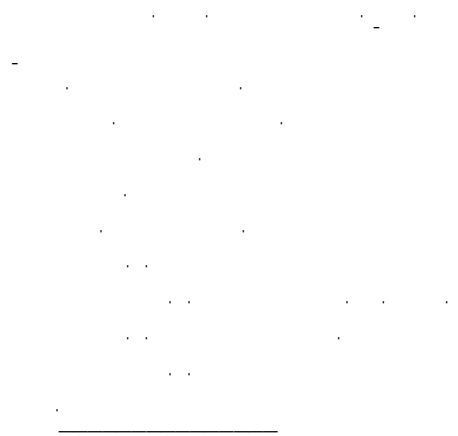
?











1.  $y'' + 2y' + 2y = 0$   $y(0) = 1$   $y(\pi) = 0$

1.  $y'' + 2y' + 2y = 0$   $y(0) = 1$   $y(\pi) = 0$  'hho'

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-11)

2.  $y'' + 2y' + 2y = 0$   $y(0) = 1$   $y(\pi) = 0$  'k-dK'

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3.  $y'' + 2y' + 2y = 0$   $y(0) = 1$   $y(\pi) = 0$  'hho'

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4.  $y'' + 2y' + 2y = 0$   $y(0) = 1$   $y(\pi) = 0$

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5.  $y'' + 2y' + 2y = 0$   $y(0) = 1$   $y(\pi) = 0$

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1.



'hho'

4.

?

1.

?

... hho ...











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\_\_\_\_\_ 'hho

a. \_\_\_\_\_ 'hho'

-11)

b. \_\_\_\_\_ k-oK

c. \_\_\_\_\_ 'hho

d. \_\_\_\_\_

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