



@COMPUTERENGINEE
RINGDEPARTMENT22

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سؤال 7

صحيح

درجة 2.0 من 2.0

علم السؤال

$y''' - 6y'' + 12y' - 8y = \frac{4e^{2t}}{t^2}$. Find the general solution of the differential equation

$y = (c_1 + c_2t + c_3t^2)e^{2t} - 4te^{2t}(2\ln|t| - 3)$ ☐

$y = (c_1 + c_2t + c_3t^2)e^{2t} - te^{2t}(2\ln|t| - 3)$ ☐

$y = (c_1 + c_2t + c_3t^2)e^{2t} - 4te^{2t}\ln|t|$ ☒

$y = (c_1 + c_2t + c_3t^2)e^{2t} - te^{2t}\ln|t|$ ☐

none of the given answers is true ☐



الإجابة الصحيحة هي: $y = (c_1 + c_2t + c_3t^2)e^{2t} - 4te^{2t}\ln|t|$

سؤال 8

صحيح

درجة 1.0 من 1.0

علم السؤال

Find $u_1(t)$ if $y_p = u_1(t) + e^{2t}u_2(t) + e^{-2t}u_3(t)$ is a particular solution of the differential equation $y''' - 4y' = -t + 5$.

$u_1(t) = \frac{1}{8}(t^2 + 5t)$ ☐

$u_1(t) = \frac{1}{8}(t^2 + 10t)$ ☐

$u_1(t) = \frac{1}{8}(t^2 - 5t)$ ☐

$u_1(t) = \frac{1}{8}(t^2 - 10t)$ ☒

none of the given answers is true ☐



الإجابة الصحيحة هي: $u_1(t) = \frac{1}{8}(t^2 - 10t)$

سؤال 5

صحيح

درجة 1.0 من 1.0

علم السؤال

If $y_p = u_1(t) + t u_2(t) + e^{-3t} u_3(t)$ is a particular solution of the differential equation

$$u_1(t) = y''' + 3y'' = \frac{9}{t}, \quad \text{then}$$

none of the given answers is true ☐



$-3t - \ln |t|$ ☒

$3 \ln |t|$ ☐

$-3 \ln |t|$ ☐

$3t - \ln |t|$ ☐

الإجابة الصحيحة هي: $-3t - \ln |t|$

سؤال 6

صحيح

درجة 1.0 من 1.0

علم السؤال

We know that if $y_p = u_1(t) + e^{-t} u_2(t) + e^{2t} u_3(t)$ is a particular solution of the $W_2(t)$ differential equation $y''' - y'' - 2y' = g(t)$, then $u_2' = \frac{g(t)W_2(t)}{W(t)}$. Find

$-e^{-t}$ ☐

$2e^{2t}$ ☐

$3e^t$ ☐

none of the given answers is true ☐



$-2e^{2t}$ ☒

الإجابة الصحيحة هي: $-2e^{2t}$

سؤال 3

طأ

نقطة 0.0 من 1.0

علم السؤال

Find a suitable form for particular solution of the differential equation

$$y^{(4)} + 18y'' + 81y = t^2 \sin(3t) + 2t + 1.$$

✗

$$y_p = \cos(3t)(A_2 t^2 + A_1 t + A_0) + \sin(3t)(B_2 t^2 + B_1 t + B_0) + C_1 t + C_0$$

$$y_p = t[\cos(3t)(A_2 t^2 + A_1 t + A_0) + \sin(3t)(B_2 t^2 + B_1 t + B_0)] + C_1 t + C_0$$

$$y_p = \cos(3t)(A_2 t^2 + A_1 t + A_0) + \sin(t)(B_2 t^2 + B_1 t + B_0) + t^2(C_1 t + C_0)$$

$$y_p = t^2[\cos(3t)(A_2 t^2 + A_1 t + A_0) + \sin(3t)(B_2 t^2 + B_1 t + B_0)] + C_1 t + C_0$$

none of the given answers is true ☐

الإجابة الصحيحة هي: $y_p = t^2[\cos(3t)(A_2 t^2 + A_1 t + A_0) + \sin(3t)(B_2 t^2 + B_1 t + B_0)] + C_1 t + C_0$

سؤال 4

صحيح

نقطة 1.0 من 1.0

علم السؤال

Find a suitable form for particular solution of the differential equation

$$y^{(5)} + 25y^{(3)} = 5 - te^{5t} + \sin(5t).$$

✓

$$y_p = A_0 t^3 + (B_1 t + B_0)e^{5t} + t[C_0 \cos(5t) + D_0 \sin(5t)]$$

$$y_p = A_0 t^3 + t(B_1 t + B_0)e^{5t} + C_0 \cos(5t) + D_0 \sin(5t)$$

$$y_p = A_0 t^3 + (B_1 t + B_0)e^{5t} + C_0 \cos(5t) + D_0 \sin(5t)$$

none of the given answers is true ☐

$$y_p = A_0 + (B_1 t + B_0)e^{5t} + t[C_0 \cos(5t) + D_0 \sin(5t)]$$

الإجابة الصحيحة هي: $y_p = A_0 t^3 + (B_1 t + B_0)e^{5t} + t[C_0 \cos(5t) + D_0 \sin(5t)]$

سؤال 1

صحيح

درجة 1.0 من 1.0

علم السؤال

Find the general solution of the differential equation

$$y^{(4)} + 12y'' - 64y = 8(-1 + 20t)e^{2t}.$$

$$y = c_1 e^{2t} + c_2 e^{-2t} + c_3 \sin(4t) + c_4 \cos(4t) - te^{2t} - t^2 e^{2t} \quad \text{○}$$

none of the given answers is true ○

$$y = c_1 e^{2t} + c_2 e^{-2t} + c_3 \sin(4t) + c_4 \cos(4t) - te^{2t} + t^2 e^{2t} \quad \text{●}$$

$$y = c_1 e^{2t} + c_2 e^{-2t} + c_3 \sin(4t) + c_4 \cos(4t) + te^{2t} - t^2 e^{2t} \quad \text{○}$$

$$y = c_1 e^{2t} + c_2 e^{-2t} + c_3 \sin(4t) + c_4 \cos(4t) + te^{2t} + t^2 e^{2t} \quad \text{○}$$



الإجابة الصحيحة هي: $y = c_1 e^{2t} + c_2 e^{-2t} + c_3 \sin(4t) + c_4 \cos(4t) - te^{2t} + t^2 e^{2t}$

سؤال 2

صحيح

درجة 2.0 من 2.0

علم السؤال

Find a particular solution of the differential equation

$$y''' + 6y'' + 4y' + 24y = 40 \sin(2t).$$

none of the given answers is true ○

$$y_p = -\frac{3}{2}t \cos(2t) + \frac{1}{2}t \sin(2t) \quad \text{○}$$

$$y_p = \frac{3}{2}t \cos(2t) - \frac{1}{2}t \sin(2t) \quad \text{○}$$

$$y_p = -\frac{3}{2}t \cos(2t) - \frac{1}{2}t \sin(2t) \quad \text{●}$$

$$y_p = \frac{3}{2}t \cos(2t) + \frac{1}{2}t \sin(2t) \quad \text{○}$$



الإجابة الصحيحة هي: $y_p = -\frac{3}{2}t \cos(2t) - \frac{1}{2}t \sin(2t)$

سؤال 5

صحيح

درجة 1.0 من 1.0

علم السؤال

If $y_p = u_1(t) + t u_2(t) + e^{-2t} u_3(t)$ is a particular solution of the differential equation $y''' + 2y'' = \frac{4e^{-2t}}{t^2}$, then $u_3(t) =$



$2 \ln |t|$ ☐

$-\frac{1}{t}$ ☒

$\frac{1}{t}$ ☐

none of the given answers is true ☐

$-2 \ln |t|$ ☐

الإجابة الصحيحة هي: $-\frac{1}{t}$

سؤال 6

صحيح

درجة 1.0 من 1.0

علم السؤال

We know that if $y_p = u_1(t) + e^{-t} u_2(t) + e^{-3t} u_3(t)$ is a particular solution of the differential equation

$$y''' + 4y'' + 3y' = g(t), \text{ then } u_3' = \frac{g(t)W_3(t)}{W(t)}. \text{ Find } W_3(t)$$



$-e^{-t}$ ☒

none of the given answers is true ☐

$-2e^{-4t}$ ☐

$3e^{-3t}$ ☐

$-3e^{-3t}$ ☐

الإجابة الصحيحة هي: $-e^{-t}$

سؤال 7

صحيح

درجة 2.0 من 2.0

علم السؤال

Find the general solution of the differential equation

$$y''' - 9y'' + 27y' - 27y = \frac{3e^{3t}}{t}.$$

none of the given answers is true ☐

$$y = (c_1 + c_2t + c_3t^2)e^{3t} + \frac{3}{4}te^{3t}(2\ln|t| - 3) \quad \text{○}$$

$$y = (c_1 + c_2t + c_3t^2)e^{3t} + \frac{3}{4}t^2e^{3t}(2\ln|t| + 3) \quad \text{○}$$

$$y = (c_1 + c_2t + c_3t^2)e^{3t} + \frac{3}{4}te^{3t}(2\ln|t| + 3) \quad \text{○}$$

$$\checkmark \quad y = (c_1 + c_2t + c_3t^2)e^{3t} + \frac{3}{4}t^2e^{3t}(2\ln|t| - 3) \quad \text{●}$$

الإجابة الصحيحة هي:

$$y = (c_1 + c_2t + c_3t^2)e^{3t} + \frac{3}{4}t^2e^{3t}(2\ln|t| - 3)$$

سؤال 8

صحيح

درجة 1.0 من 1.0

علم السؤال

Find $u_1(t)$ if $y_p = u_1(t) + e^{\sqrt{3}t}u_2(t) + e^{-\sqrt{3}t}u_3(t)$ is a particular solution of the differential equation

$$y''' - 3y' = t - 5.$$

$$u_1(t) = -\frac{1}{6}(t^2 - 5t) \quad \text{○}$$

$$u_1(t) = -\frac{1}{6}(t^2 + 5t) \quad \text{○}$$

$$\checkmark \quad u_1(t) = -\frac{1}{6}(t^2 - 10t) \quad \text{●}$$

$$u_1(t) = -\frac{1}{6}(t^2 + 10t) \quad \text{○}$$

none of the given answers is true ☐

$$u_1(t) = -\frac{1}{6}(t^2 - 10t) \text{ هي: الإجابة الصحيحة هي:}$$

سؤال 1

صحيح

درجة 1.0 من 1.0

علم السؤال

Find the general solution of the differential equation

$$y^{(4)} + 12y'' - 64y = 8(-1 + 20t)e^{2t}.$$

$$y = c_1 e^{2t} + c_2 e^{-2t} + c_3 \sin(4t) + c_4 \cos(4t) + te^{2t} - t^2 e^{2t} \quad \text{○}$$

$$y = c_1 e^{2t} + c_2 e^{-2t} + c_3 \sin(4t) + c_4 \cos(4t) - te^{2t} - t^2 e^{2t} \quad \text{○}$$

$$y = c_1 e^{2t} + c_2 e^{-2t} + c_3 \sin(4t) + c_4 \cos(4t) - te^{2t} + t^2 e^{2t} \quad \text{●}$$

$$y = c_1 e^{2t} + c_2 e^{-2t} + c_3 \sin(4t) + c_4 \cos(4t) + te^{2t} + t^2 e^{2t} \quad \text{○}$$

none of the given answers is true ○

الإجابة الصحيحة هي:

$$y = c_1 e^{2t} + c_2 e^{-2t} + c_3 \sin(4t) + c_4 \cos(4t) - te^{2t} + t^2 e^{2t}$$

سؤال 2

صحيح

درجة 2.0 من 2.0

علم السؤال

Find a particular solution of the differential equation

$$y''' + 4y'' + 4y' + 16y = 20 \sin(2t).$$

none of the given answers is true ○

$$y_p = -t \cos(2t) - \frac{1}{2}t \sin(2t) \quad \text{●}$$

$$y_p = -t \cos(2t) + \frac{1}{2}t \sin(2t) \quad \text{○}$$

$$y_p = t \cos(2t) - \frac{1}{2}t \sin(2t) \quad \text{○}$$

$$y_p = t \cos(2t) + \frac{1}{2}t \sin(2t) \quad \text{○}$$

$$y_p = -t \cos(2t) - \frac{1}{2}t \sin(2t) \quad \text{الإجابة الصحيحة هي:}$$

سؤال 3

صحيح

درجة 1.0 من 1.0

علم السؤال

Find a suitable form for particular solution of the differential equation

$$y^{(4)} - 50y'' + 625y = t^2 e^{-5t} + (t^2 - 1)e^{-4t}.$$



$$y_p = t^2 e^{-5t} (A_2 t^2 + A_1 t + A_0) + e^{-4t} (B_2 t^2 + B_1 t + B_0) \quad \text{Ⓐ}$$

$$y_p = e^{-5t} (A_2 t^2 + A_1 t + A_0) + e^{-4t} (B_2 t^2 + B_1 t + B_0) \quad \text{Ⓑ}$$

$$y_p = t e^{-5t} (A_2 t^2 + A_1 t + A_0) + e^{-4t} (B_2 t^2 + B_1 t + B_0) \quad \text{Ⓒ}$$

$$y_p = e^{-5t} (A_2 t^2 + A_1 t + A_0) + t^2 e^{-4t} (B_2 t^2 + B_1 t + B_0) \quad \text{Ⓓ}$$

none of the given answers is true ☐

الإجابة الصحيحة هي: $y_p = t^2 e^{-5t} (A_2 t^2 + A_1 t + A_0) + e^{-4t} (B_2 t^2 + B_1 t + B_0)$

سؤال 4

صحيح

درجة 1.0 من 1.0

علم السؤال

Find a suitable form for particular solution of the differential equation

$$36y^{(5)} - y^{(3)} = 6 - t e^{-t/6} + \sin(t/6).$$



$$y_p = A_0 t^3 + t(B_1 t + B_0)e^{-t/6} + C_0 \cos(t/6) + D_0 \sin(t/6) \quad \text{Ⓐ}$$

$$y_p = A_0 + t(B_1 t + B_0)e^{-t/6} + C_0 \cos(t/6) + D_0 \sin(t/6) \quad \text{Ⓑ}$$

none of the given answers is true ☐

$$y_p = A_0 t^3 + (B_1 t + B_0)e^{-t/6} + t[C_0 \cos(t/6) + D_0 \sin(t/6)] \quad \text{Ⓒ}$$

$$y_p = A_0 t^3 + (B_1 t + B_0)e^{-t/6} + C_0 \cos(t/6) + D_0 \sin(t/6) \quad \text{Ⓓ}$$

الإجابة الصحيحة هي: $y_p = A_0 t^3 + t(B_1 t + B_0)e^{-t/6} + C_0 \cos(t/6) + D_0 \sin(t/6)$

سؤال 1

صحيح

درجة 1.0 من 1.0

علم السؤال

$y^{(4)} - 3y'' - 4y = 2(11 + 20t)e^{2t}$. Find the general solution of the differential equation

$y = c_1 e^{2t} + c_2 e^{-2t} + c_3 \sin(t) + c_4 \cos(t) + te^{2t} + t^2 e^{2t}$ ☐

$y = c_1 e^{2t} + c_2 e^{-2t} + c_3 \sin(t) + c_4 \cos(t) + te^{2t} - t^2 e^{2t}$ ☐

$y = c_1 e^{2t} + c_2 e^{-2t} + c_3 \sin(t) + c_4 \cos(t) - te^{2t} - t^2 e^{2t}$ ☐

$y = c_1 e^{2t} + c_2 e^{-2t} + c_3 \sin(t) + c_4 \cos(t) - te^{2t} + t^2 e^{2t}$ ☒

none of the given answers is true ☐



الإجابة الصحيحة هي: $y = c_1 e^{2t} + c_2 e^{-2t} + c_3 \sin(t) + c_4 \cos(t) - te^{2t} + t^2 e^{2t}$

سؤال 2

صحيح

درجة 2.0 من 2.0

علم السؤال

$y''' - 3y'' + y' - 3y = 10 \cos(t)$. Find a particular solution of the differential equation

$y_p = -\frac{1}{2}t \cos(t) + \frac{3}{2}t \sin(t)$ ☐

$y_p = \frac{1}{2}t \cos(t) + \frac{3}{2}t \sin(t)$ ☐

$y_p = \frac{1}{2}t \cos(t) - \frac{3}{2}t \sin(t)$ ☐

$y_p = -\frac{1}{2}t \cos(t) - \frac{3}{2}t \sin(t)$ ☒

none of the given answers is true ☐



الإجابة الصحيحة هي: $y_p = -\frac{1}{2}t \cos(t) - \frac{3}{2}t \sin(t)$

سؤال 3

خطأ

درجة 0.0 من 1.0

علم السؤال

$y^{(4)} - 32y'' + 256y = t^2 e^{-4t} + (t^2 - 1)e^{-3t}$. Find a suitable form for particular solution of the differential equation

none of the given answers is true ☐

$y_p = e^{-4t}(A_2 t^2 + A_1 t + A_0) + e^{-3t}(B_2 t^2 + B_1 t + B_0)$ ☐

$y_p = e^{-4t}(A_2 t^2 + A_1 t + A_0) + t^2 e^{-3t}(B_2 t^2 + B_1 t + B_0)$ ☐

$y_p = te^{-4t}(A_2 t^2 + A_1 t + A_0) + e^{-3t}(B_2 t^2 + B_1 t + B_0)$ ☒

$y_p = t^2 e^{-4t}(A_2 t^2 + A_1 t + A_0) + e^{-3t}(B_2 t^2 + B_1 t + B_0)$ ☐



الإجابة الصحيحة هي: $y_p = t^2 e^{-4t}(A_2 t^2 + A_1 t + A_0) + e^{-3t}(B_2 t^2 + B_1 t + B_0)$

سؤال 4

خطأ

درجة 0.0 من 1.0

علم السؤال

$36y^{(5)} + y^{(3)} = 6 - te^{-t/6} + \sin(t/6)$. Find a suitable form for particular solution of the differential equation

✗

$y_p = A_0 t^3 + (B_1 t + B_0) e^{-t/6} + t [C_0 \cos(t/6) + D_0 \sin(t/6)]$ ☐

$y_p = A_0 t^3 + (B_1 t + B_0) e^{-t/6} + C_0 \cos(t/6) + D_0 \sin(t/6)$ ☐

$y_p = A_0 + (B_1 t + B_0) e^{-t/6} + t [C_0 \cos(t/6) + D_0 \sin(t/6)]$ ☒

$y_p = A_0 t^3 + t(B_1 t + B_0) e^{-t/6} + C_0 \cos(t/6) + D_0 \sin(t/6)$ ☐

none of the given answers is true ☐

الإجابة الصحيحة هي: $y_p = A_0 t^3 + (B_1 t + B_0) e^{-t/6} + t [C_0 \cos(t/6) + D_0 \sin(t/6)]$

سؤال 5

صحيح

درجة 1.0 من 1.0

علم السؤال

✓

$u_1(t)$ is a particular solution of the differential equation $y''' + 2y'' = \frac{-4(2t+1)}{t^2}$, then

$-4 \ln |t| - \frac{2}{t}$ ☐

$4t + 4 \ln |t| - \frac{1}{t}$ ☒

$-4 \ln |t| + \frac{2}{t}$ ☐

none of the given answers is true ☐

$4t - 4 \ln |t| - \frac{1}{t}$ ☐

الإجابة الصحيحة هي: $4t + 4 \ln |t| - \frac{1}{t}$

سؤال 6

صحيح

درجة 1.0 من 1.0

علم السؤال

✓

We know that if $y_p = u_1(t) + e^t u_2(t) + e^{-t} u_3(t)$ is a particular solution of the differential equation $y''' - y' = g(t)$, then $W_2(t) u_2' = \frac{g(t)W_2(t)}{W(t)}$. Find

-2 ☐

2 ☐

e^t ☐

none of the given answers is true ☐

e^{-t} ☒

الإجابة الصحيحة هي: e^{-t}

سؤال 7

صحيح

درجة 2.0 من 2.0

علم السؤال

✓

$y''' + 9y'' + 27y' + 27y = \frac{4e^{-3t}}{t^3}$. Find the general solution of the differential equation

$y = (c_1 + c_2 t + c_3 t^2) e^{-3t} + e^{-3t} (2 \ln |t| + 3)$ ☒

$y = (c_1 + c_2 t + c_3 t^2) e^{-3t} + t e^{-3t} (2 \ln |t| - 3)$ ☐

none of the given answers is true ☐

$y = (c_1 + c_2 t + c_3 t^2) e^{-3t} + t e^{-3t} (2 \ln |t| + 3)$ ☐

$y = (c_1 + c_2 t + c_3 t^2) e^{-3t} + e^{-3t} (2 \ln |t| - 3)$ ☐

الإجابة الصحيحة هي: $y = (c_1 + c_2 t + c_3 t^2) e^{-3t} + e^{-3t} (2 \ln |t| + 3)$

$y''' - 3y' = t - 3$. Find $u_1(t)$ if $y_p = u_1(t) + e^{\sqrt{3}t} u_2(t) + e^{-\sqrt{3}t} u_3(t)$ is a particular solution of the differential equation

✓

☐ $u_1(t) = -\frac{1}{6}(t^2 + 6t)$
☐ none of the given answers is true
☒ $u_1(t) = -\frac{1}{6}(t^2 - 6t)$
☐ $u_1(t) = -\frac{1}{6}(t^2 + 3t)$
☐ $u_1(t) = -\frac{1}{6}(t^2 - 3t)$

سؤال 8
صحيح
درجة 1.0 من 1.0
علم السؤال

الإجابة الصحيحة هي: $u_1(t) = -\frac{1}{6}(t^2 - 6t)$

$y^{(4)} - 8y'' + 16y = t^2 e^{-2t} + t^2 - 1$. Find a suitable form for particular solution of the differential equation

✓

☐ $y_p = te^{-2t}(A_2 t^2 + A_1 t + A_0) + B_2 t^2 + B_1 t + B_0$
☒ $y_p = e^{-2t}(A_2 t^2 + A_1 t + A_0) + t^2(B_2 t^2 + B_1 t + B_0)$
☐ none of the given answers is true
☐ $y_p = e^{-2t}(A_2 t^2 + A_1 t + A_0) + B_2 t^2 + B_1 t + B_0$
☐ $y_p = t^2 e^{-2t}(A_2 t^2 + A_1 t + A_0) + B_2 t^2 + B_1 t + B_0$

سؤال 3
صحيح
درجة 1.0 من 1.0
علم السؤال

الإجابة الصحيحة هي: $y_p = t^2 e^{-2t}(A_2 t^2 + A_1 t + A_0) + B_2 t^2 + B_1 t + B_0$

$y''' - 2y' = -t + 2$. Find $u_1(t)$ if $y_p = u_1(t) + e^{\sqrt{2}t} u_2(t) + e^{-\sqrt{2}t} u_3(t)$ is a particular solution of the differential equation

✓

☐ none of the given answers is true
☐ $u_1(t) = \frac{1}{4}(t^2 + 4t)$
☒ $u_1(t) = \frac{1}{4}(t^2 - 4t)$
☐ $u_1(t) = \frac{1}{4}(t^2 - 2t)$
☐ $u_1(t) = \frac{1}{4}(t^2 + 2t)$

سؤال 8
صحيح
درجة 1.0 من 1.0
علم السؤال

الإجابة الصحيحة هي: $u_1(t) = \frac{1}{4}(t^2 - 4t)$

سؤال 5

صحيح

درجة 1.0 من 1.0

علم السؤال

$u_2(t) = \text{If } y_p = u_1(t) + t u_2(t) + e^{-t} u_3(t)$ is a particular solution of the differential equation $y''' + y'' = \frac{-t-1}{t^2}$, then

none of the given answers is true ☐

$t - 2 \ln |t| - \frac{1}{t}$ ☐

$-t + 2 \ln |t| - \frac{1}{t}$ ☐

$-\ln |t| - \frac{1}{t}$ ☐

$-\ln |t| + \frac{1}{t}$ ☒



الإجابة الصحيحة هي: $-\ln |t| + \frac{1}{t}$

سؤال 4

صحيح

درجة 1.0 من 1.0

علم السؤال

$y^{(5)} + 16y^{(3)} = 4 + te^{4t} + \cos(4t)$. Find a suitable form for particular solution of the differential equation

$y_p = A_0 + (B_1 t + B_0)e^{4t} + t[C_0 \cos(4t) + D_0 \sin(4t)]$ ☐

none of the given answers is true ☐

$y_p = A_0 t^3 + t(B_1 t + B_0)e^{4t} + C_0 \cos(4t) + D_0 \sin(4t)$ ☐

$y_p = A_0 t^3 + (B_1 t + B_0)e^{4t} + t[C_0 \cos(4t) + D_0 \sin(4t)]$ ☒

$y_p = A_0 t^3 + (B_1 t + B_0)e^{4t} + C_0 \cos(4t) + D_0 \sin(4t)$ ☐



الإجابة الصحيحة هي: $y_p = A_0 t^3 + (B_1 t + B_0)e^{4t} + t[C_0 \cos(4t) + D_0 \sin(4t)]$

سؤال 6

صحيح

درجة 1.0 من 1.0

علم السؤال

We know that if $y_p = u_1(t) + e^{-t} u_2(t) + e^{-4t} u_3(t)$ is a particular solution of the differential equation $y''' + 5y'' + 4y' = g(t)$, $W_3(t)$ then $u_3' = \frac{g(t)W_3(t)}{W(t)}$. Find

$4e^{-4t}$ ☐

$-3e^{-5t}$ ☐

$-4e^{-4t}$ ☐

none of the given answers is true ☐

$-e^{-t}$ ☒



الإجابة الصحيحة هي: $-e^{-t}$

$y''' - 3y'' + 3y' - y = 9\sqrt{t}e^t$. Find the general solution of the differential equation

✓

☐ $y = (c_1 + c_2t + c_3t^2)e^t + \frac{16}{21}t^{5/2}e^t$
☐ $y = (c_1 + c_2t + c_3t^2)e^t + \frac{16}{21}t^{7/2}e^t$
☒ $y = (c_1 + c_2t + c_3t^2)e^t + \frac{24}{35}t^{7/2}e^t$
☐ none of the given answers is true
☐ $y = (c_1 + c_2t + c_3t^2)e^t + \frac{24}{35}t^{5/2}e^t$

سؤال 7
صحيح
درجة 2.0 من 2.0
علم السؤال

الإجابة الصحيحة هي: $y = (c_1 + c_2t + c_3t^2)e^t + \frac{24}{35}t^{7/2}e^t$

$y^{(4)} + 7y'' - 144y = 4(-7 + 75t)e^{3t}$. Find the general solution of the differential equation

✓

☐ $y = c_1e^{3t} + c_2e^{-3t} + c_3\sin(4t) + c_4\cos(4t) + te^{3t} - t^2e^{3t}$
☒ $y = c_1e^{3t} + c_2e^{-3t} + c_3\sin(4t) + c_4\cos(4t) - te^{3t} + t^2e^{3t}$
☐ none of the given answers is true
☐ $y = c_1e^{3t} + c_2e^{-3t} + c_3\sin(4t) + c_4\cos(4t) - te^{3t} - t^2e^{3t}$
☐ $y = c_1e^{3t} + c_2e^{-3t} + c_3\sin(4t) + c_4\cos(4t) + te^{3t} + t^2e^{3t}$

سؤال 1
صحيح
درجة 1.0 من 1.0
علم السؤال

الإجابة الصحيحة هي: $y = c_1e^{3t} + c_2e^{-3t} + c_3\sin(4t) + c_4\cos(4t) - te^{3t} + t^2e^{3t}$

$y''' + 5y'' + y' + 5y = 26\sin(t)$. Find a particular solution of the differential equation

✓

☒ $y_p = -\frac{5}{2}t\cos(t) - \frac{1}{2}t\sin(t)$
☐ $y_p = \frac{5}{2}t\cos(t) - \frac{1}{2}t\sin(t)$
☐ $y_p = \frac{5}{2}t\cos(t) + \frac{1}{2}t\sin(t)$
☐ none of the given answers is true
☐ $y_p = -\frac{5}{2}t\cos(t) + \frac{1}{2}t\sin(t)$

سؤال 2
صحيح
درجة 2.0 من 2.0
علم السؤال

الإجابة الصحيحة هي: $y_p = -\frac{5}{2}t\cos(t) - \frac{1}{2}t\sin(t)$