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Which of the following
differential equations is NOT
?exact

None of the given equations ☐

$(e^x + 7y) + (7x + e^{-y})y' = 0$ ☐

✓ $(e^x + 7y) - (7x + e^{-y})y' = 0$ ☒

$(e^x + 8y) + (8x + e^{-y})y' = 0$ ☐

$(e^x - 8y) - (8x + e^{-y})y' = 0$ ☐

الإجابة الصحيحة هي:

$(e^x + 7y) - (7x + e^{-y})y' = 0$

سؤال 5

صحيح

درجة 1.0 من 1.0

علم السؤال

Which of the following
?differential equations is exact

$(6x + 5y) + (4x + 2y)y' = 0$ ☐

None of the given equations ☐

$(6x - 5y) + (4x + 2y)y' = 0$ ☐

✓ $(5x + 4y) + (4x + 2y)y' = 0$ ☒

$(5x - 4y) + (4x + 2y)y' = 0$ ☐

الإجابة الصحيحة هي:

$$(5x + 4y) + (4x + 2y)y' = 0$$

Find the solution of the initial
value problem

$$y' + p(t)y = 0, \quad y(0) = 1,$$

where

$$p(t) = \begin{cases} 1, & 0 \leq t \leq 2 \\ -1, & t > 2. \end{cases}$$

✓ $y(t) = \begin{cases} e^{-t}, & 0 \leq t \leq 2 \\ e^{t-4}, & t > 2. \end{cases}$ ☒

$$y(t) = \begin{cases} e^t, & 0 \leq t \leq 2 \\ e^{4-t}, & t > 2. \end{cases}$$
 ☐

$$y(t) = \begin{cases} e^{2t}, & 0 \leq t \leq 2 \\ e^{8-2t}, & t > 2. \end{cases}$$
 ☐

none of the given answers ☐

$$y(t) = \begin{cases} e^{-2t}, & 0 \leq t \leq 2 \\ e^{2t-8}, & t > 2. \end{cases}$$
 ☐

الإجابة الصحيحة هي:

$$y(t) = \begin{cases} e^{-t}, & 0 \leq t \leq 2 \\ e^{t-4}, & t > 2. \end{cases}$$

Find the solution of the initial value problem

$$. \quad ty' + 2y = 16t^4 y^{3/2}, \quad y(1) = 1$$

$$y(t) = \frac{1}{t(2t^4 - 3)^2} \quad \text{○}$$

$$y(t) = \frac{1}{t^2(2t^2 - 3)^2} \quad \text{○}$$



$$y(t) = \frac{1}{t^2(2t^4 - 3)^2} \quad \text{●}$$

$$y(t) = \frac{1}{t(2t^2 - 3)^2} \quad \text{○}$$

none of the given answers ○

الإجابة الصحيحة هي:

$$y(t) = \frac{1}{t^2(2t^4 - 3)^2}$$

Find the solution of the differential equation

$$y' + y = \frac{\sin(4t)}{y^2}$$

none of the given answers ☐

$$y^3 = \frac{1}{5} [\sin(4t) - 2 \cos(4t)] + ce^{-2t} \quad \text{☐$$

$$y^3 = \frac{3}{25} [3 \cos(4t) - 4 \sin(4t)] + ce^{-3t} \quad \text{☐$$

$$y^3 \checkmark = \frac{3}{25} [3 \sin(4t) - 4 \cos(4t)] + ce^{-3t} \quad \text{☒$$

$$y^3 = \frac{1}{5} [\cos(4t) - 2 \sin(4t)] + ce^{-2t} \quad \text{☐$$

الإجابة الصحيحة هي:

$$y^3 = \frac{3}{25} [3 \sin(4t) - 4 \cos(4t)] + ce^{-3t}$$

The solution of the IVP

$$(t - 4)y' + \ln(t + 2) y = 2 \sin t, \quad y(5) = 1$$

exists in the interval

none of the given answers is ☐
true

$(-\infty, -2)$ ☐

$(-2, 4)$ ☐

$(4, \infty)$ ☒

$(0, \infty)$ ☐



الإجابة الصحيحة هي: $(4, \infty)$

The solution of the IVP $(t^2 - 4)y' + (t^2 + 4)y = te^t$, $y(0) = 1$ exists in the interval

☐ $(0, \infty)$

☐ none of the given answers is true

☐ $(2, \infty)$

☒ $(-2, 2)$

☐ $(-\infty, -2)$

سؤال 1
صحيح
درجة 1.0 من 1.0
ج علم السؤال

الإجابة الصحيحة هي: $(-2, 2)$

Find the solution of the differential equation $2y' + y = \frac{\sin(4t)}{y}$

☒ $y^2 = \frac{1}{17} [\sin(4t) - 4 \cos(4t)] + ce^{-t}$

☐ $y^2 = \frac{1}{17} [\cos(4t) - 4 \sin(4t)] + ce^{-t}$

☐ $y^2 = \frac{1}{4} [2 \cos(4t) - \sin(4t)] + ce^{-2t}$

☐ none of the given answers

☐ $y^2 = \frac{1}{4} [2 \sin(4t) - \cos(4t)] + ce^{-2t}$

سؤال 2
صحيح
درجة 1.0 من 1.0
ج علم السؤال

الإجابة الصحيحة هي: $y^2 = \frac{1}{17} [\sin(4t) - 4 \cos(4t)] + ce^{-t}$

Find the solution of the initial value problem $ty' + 2y = 12t^4 y^{3/2}$, $y(1) = 1$

☐ none of the given answers

☐ $y(t) = \frac{1}{t(2t^3 - 3)^2}$

☐ $y(t) = \frac{1}{t^2(2t^3 - 3)^2}$

☐ $y(t) = \frac{1}{t(2t^3 - 3)^2}$

☒ $y(t) = \frac{1}{t^2(2t^3 - 3)^2}$

سؤال 3
صحيح
درجة 1.0 من 1.0
ج علم السؤال

الإجابة الصحيحة هي: $y(t) = \frac{1}{t^2(2t^3 - 3)^2}$

Find the solution of the initial value problem $y' + p(t)y = 0$, $y(0) = 1$, where $p(t) = \begin{cases} -3, & 0 \leq t \leq 2 \\ 3, & t > 2. \end{cases}$

☐ $y(t) = \begin{cases} e^{3t}, & 0 \leq t \leq 2 \\ e^{3t-6}, & t > 2. \end{cases}$

☐ $y(t) = \begin{cases} e^{-3t}, & 0 \leq t \leq 2 \\ e^{3t-6}, & t > 2. \end{cases}$

☐ $y(t) = \begin{cases} e^{-3t}, & 0 \leq t \leq 2 \\ e^{3t-12}, & t > 2. \end{cases}$

☐ none of the given answers

☒ $y(t) = \begin{cases} e^{3t}, & 0 \leq t \leq 2 \\ e^{12-3t}, & t > 2. \end{cases}$

سؤال 4
صحيح
درجة 1.0 من 1.0
ج علم السؤال

الإجابة الصحيحة هي: $y(t) = \begin{cases} e^{3t}, & 0 \leq t \leq 2 \\ e^{12-3t}, & t > 2. \end{cases}$

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$$y(t) = \begin{cases} e^{3t}, & 0 \leq t \leq 2 \\ e^{12-3t}, & t > 2. \end{cases}$$

الإجابة الصحيحة هي:

Which of the following differential equations is exact

$$(6x + 5y) + (4x + 2y)y' = 0$$

$$(6x - 5y) + (4x + 2y)y' = 0$$

$$(5x - 4y) + (4x + 2y)y' = 0$$

$$(5x + 4y) + (4x + 2y)y' = 0$$

$$\text{None of the given equations}$$



$$(5x + 4y) - (4x + 2y)y' = 0$$

الإجابة الصحيحة هي:

Which of the following differential equations is NOT exact

$$\text{None of the given equations}$$

$$(e^{-x} - 5y) - (5x + e^x)y' = 0$$

$$(e^{-x} + 4y) + (4x + e^x)y' = 0$$

$$(e^{-x} + 4y) - (4x + e^x)y' = 0$$

$$(e^{-x} - 5y) + (5x + e^x)y' = 0$$



$$(e^{-x} + 4y) - (4x + e^x)y' = 0$$

الإجابة الصحيحة هي:

Solve the equation

$$[4x^4 \sin(y) - y^4 e^{-x}]dx + [x^4 \cos(y) + 4y^3 e^{-x}]dy = 0$$

$$x^4 \cos(y) + y^4 e^{-x} = c$$

$$\text{none of the given answers is true}$$

$$x^4 \sin(y) + y^4 e^{-x} = c$$

$$x^4 \cos(y) + y^4 e^{-x} = c$$

$$x^4 \sin(y) + y^4 e^{-x} = c$$



$$x^4 \sin(y) + y^4 e^{-x} = c$$

الإجابة الصحيحة هي:

Solve the initial value problem

$$y(3x^2 - 2)dx + (x^3 - 2x + 4y)dy = 0, \quad y(0) = 1$$

$$2x^2 y + 5xy + 4y^2 = 4$$

$$\text{none of the given answers is true}$$

$$2x^2 y - 5xy + 4y^2 = 4$$

$$x^3 y - 2xy + 2y^2 = 2$$

$$x^3 y - 2xy + 2y^2 = 2$$



$$x^3 y - 2xy + 2y^2 = 2$$

الإجابة الصحيحة هي:

Which of the following functions can be used as an integrating factor for the non-exact equation

سؤال 5

صحيح

درجة 1.0 من 1.0

تم العلم بالسؤال

سؤال 6

صحيح

درجة 1.0 من 1.0

تم العلم بالسؤال

سؤال 7

صحيح

درجة 1.0 من 1.0

تم العلم بالسؤال

سؤال 8

صحيح

درجة 1.0 من 1.0

تم العلم بالسؤال

سؤال 9

صحيح

1

$$x^4 \sin(y) + y^4 e^{-x} = c$$

$$x^4 \cos(y) + y^4 e^{-x} = c$$

$$x^4 \sin(y) + y^4 e^{-x} = c$$

الإجابة الصحيحة هي: $x^4 \sin(y) + y^4 e^{-x} = c$

Solve the initial value problem

$$y(3x^2 - 2)dx + (x^3 - 2x + 4y)dy = 0, \quad y(0) = 1$$

$$2x^2y + 5xy + 4y^2 = 4$$

none of the given answers is true

$$2x^2y - 5xy + 4y^2 = 4$$

$$x^3y - 2xy + 2y^2 = 2$$

$$x^3y - 2xy + 2y^2 = 2$$

الإجابة الصحيحة هي: $x^3y - 2xy + 2y^2 = 2$

Which of the following functions can be used as an integrating factor for the non-exact equation

$$\left(\frac{\sin y}{y} + 4e^{-3x} \sin x\right) dx + \left(\frac{\cos y - 12e^{-3x} \cos x}{3y}\right) dy = 0$$

$$\mu(x, y) = ye^{3x}$$

$$\mu(x, y) = ye^{-3x}$$

$$\mu(x, y) = ye^{2x}$$

none of the given answers is true

$$\mu(x, y) = ye^{-2x}$$

الإجابة الصحيحة هي: $\mu(x, y) = ye^{3x}$

Solve the equation

$$2y(\cos x - \sin x)dx + (3y + 4 \sin x + 4 \cos x)dy = 0$$

None of the given answers is true

$$y^3 + 2y^2 \sin x + 2y^2 \cos x = c$$

$$y^3 + 2y^2 \sin x - 2y^2 \cos x = c$$

$$y^3 - 2y^2 \sin x - 2y^2 \cos x = c$$

$$y^3 - 2y^2 \sin x + 2y^2 \cos x = c$$

الإجابة الصحيحة هي: $y^3 + 2y^2 \sin x + 2y^2 \cos x = c$

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النشاط التالي

Homework 3

النشاط السابق

Homework 1



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Solve the equation

$$[4x^3 \sin(2y) + y^6 e^x]dx + [2x^4 \cos(2y) + 6y^5 e^x]dy = 0$$



$$x^4 \cos(2y) + y^6 e^x = c \quad \text{○}$$

$$x^4 \sin(2y) + y^6 e^x = c \quad \text{●}$$

$$x^4 \cos(2y) + y^5 e^x = c \quad \text{○}$$

$$x^4 \sin(2y) + y^5 e^x = c \quad \text{○}$$

none of the given answers is true ○

الإجابة الصحيحة هي: $x^4 \sin(2y) + y^6 e^x = c$

سؤال 7

صحيح

درجة 1.0 من 1.0

علم السؤال

Solve the initial value problem

$$y(3x^2 + 2)dx + (x^3 + 2x + 6y)dy = 0, \quad y(0) = 1$$



none of the given answers is true ○

$$x^3 y + 3xy + 3y^2 = 3 \quad \text{○}$$

$$x^3 y - 3xy + 3y^2 = 3 \quad \text{○}$$

$$x^3 y - 2xy + 3y^2 = 3 \quad \text{○}$$

$$x^3 y + 2xy + 3y^2 = 3 \quad \text{●}$$

الإجابة الصحيحة هي: $x^3 y + 2xy + 3y^2 = 3$

سؤال 8

صحيح

درجة 1.0 من 1.0

علم السؤال

Which of the following functions can be used as an integrating factor for the non-exact equation

$$\left(\frac{\sin x}{x} + 4e^{2y} \sin y \right) dx + \left(2xe^{2y} \cos y + \frac{2 \cos x}{x} \right) dy = 0$$

?



$$\mu(x, y) = xe^{-y} \quad \text{○}$$

$$\mu(x, y) = xe^{-2y} \quad \text{●}$$

none of the given answers is true ○

$$\mu(x, y) = xe^y \quad \text{○}$$

$$\mu(x, y) = xe^{2y} \quad \text{○}$$

الإجابة الصحيحة هي: $\mu(x, y) = xe^{-2y}$

سؤال 9

صحيح

درجة 1.0 من 1.0

علم السؤال

Find the solution of the initial value problem

$$y' + p(t)y = 0, \quad y(0) = 1, \quad \text{where}$$

$$p(t) = \begin{cases} -5, & 0 \leq t \leq 2 \\ 5, & t > 2. \end{cases}$$



$$y(t) = \begin{cases} e^{5t}, & 0 \leq t \leq 2 \\ e^{20-5t}, & t > 2. \end{cases} \quad \text{○}$$

$$y(t) = \begin{cases} e^{-4t}, & 0 \leq t \leq 2 \\ e^{4t-16}, & t > 2. \end{cases} \quad \text{○}$$

$$y(t) = \begin{cases} e^{4t}, & 0 \leq t \leq 2 \\ e^{16-4t}, & t > 2. \end{cases} \quad \text{○}$$

$$y(t) = \begin{cases} e^{-5t}, & 0 \leq t \leq 2 \\ e^{5t-20}, & t > 2. \end{cases} \quad \text{○}$$

none of the given answers ○

سؤال 4

صحيح

درجة 1.0 من 1.0

علم السؤال

$$y(t) = \begin{cases} e^{5t}, & 0 \leq t \leq 2 \\ e^{20-5t}, & t > 2. \end{cases} \quad \text{الإجابة الصحيحة هي:}$$

?Which of the following differential equations is exact



$$(7x - 6y) - (5x + 2y)y' = 0 \quad \text{○}$$

$$(6x - 5y) - (5x + 2y)y' = 0 \quad \text{○}$$

$$(6x - 5y) + (5x + 2y)y' = 0 \quad \text{○}$$

None of the given equations ○

$$(7x + 6y) + (5x + 2y)y' = 0 \quad \text{○}$$

سؤال 5

صحيح

درجة 1.0 من 1.0

علم السؤال

$$(6x - 5y) - (5x + 2y)y' = 0 \quad \text{الإجابة الصحيحة هي:}$$

Which of the following differential equations is NOT exact



None of the given equations ○

$$(e^{-x} - 4y) - (4x + e^{-y})y' = 0 \quad \text{○}$$

$$(e^{-x} + 3y) - (3x + e^{-y})y' = 0 \quad \text{○}$$

$$(e^{-x} + 3y) + (3x + e^{-y})y' = 0 \quad \text{○}$$

$$(e^{-x} + 4y) + (4x + e^{-y})y' = 0 \quad \text{○}$$

سؤال 6

صحيح

درجة 1.0 من 1.0

علم السؤال

$$(e^{-x} + 3y) - (3x + e^{-y})y' = 0 \quad \text{الإجابة الصحيحة هي:}$$

﴿ علم السؤال ﴾

 $(0, \infty) \circ$

﴿ علم السَّوَالِ ﴾

$$y^3 = \frac{4}{25}[4\cos(3t) - 3\sin(3t)] + ce^{-4t}$$

٣ علم السؤال

$$y(t) = \frac{1}{t(t^2 - 2)^2}$$

Which of the following functions can be used as an integrating factor for the non-exact equation

$$\left(\frac{\sin x}{x} + 4e^{2y} \sin y\right) dx + \left(2xe^{2y} \cos y + \frac{2 \cos x}{x}\right) dy = 0$$



$\mu(x, y) = xe^{-y}$ ☐

$\mu(x, y) = xe^{-2y}$ ☒

none of the given answers is true ☐

$\mu(x, y) = xe^y$ ☐

$\mu(x, y) = xe^{2y}$ ☐

الإجابة الصحيحة هي: $\mu(x, y) = xe^{-2y}$

سؤال 9

صحيح

درجة 1.0 من 1.0

علم السؤال

Solve the equation

$$2(1 + 2 \sin y - 2 \cos y) dx + 2x(\cos y + \sin y) dy = 0$$



None of the given answers is true ☐

$x^2 - 2x^2 \sin y + 2x^2 \cos y = c$ ☐

$x^2 + 2x^2 \sin y - 2x^2 \cos y = c$ ☒

$x^2 + 2x^2 \sin y + 2x^2 \cos y = c$ ☐

$x^2 - 2x^2 \sin y - 2x^2 \cos y = c$ ☐

الإجابة الصحيحة هي: $x^2 + 2x^2 \sin y - 2x^2 \cos y = c$

سؤال 10

صحيح

درجة 1.0 من 1.0

علم السؤال

[إنهاء المراجعة](#)

النشاط التالي

Homework3



الانتقال إلى ...

النشاط السابق

Homework 1



ابق على تواصل

<http://elearning.iugaza.edu.ps>

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سؤال 5

صحيح

درجة 1.0 من 1.0

علم السؤال

Which of the following differential equations is exact

$(3x - 2y) + (2x + 2y)y' = 0$ ☐

$(4x + 3y) + (2x + 2y)y' = 0$ ☐

✓ $(3x + 2y) + (2x + 2y)y' = 0$ ☒

$(4x - 3y) + (2x + 2y)y' = 0$ ☐

None of the given equations ☐

الإجابة الصحيحة هي:

$$(3x + 2y) + (2x + 2y)y' = 0$$

سؤال 6

صحيح



Which of the following functions can be used as an integrating factor for the non-exact equation

$$\left(\frac{\sin(2x)}{x} + 2e^{2y} \sin y \right) dx + \left(xe^{2y} \cos y + \frac{2 \cos(2x)}{2x} \right) dy = 0$$



$$\mu(x, y) = xe^{-2y} \quad \text{○}$$

none of the given answers is true ☐

$$\mu(x, y) = xe^{-y} \quad \text{○}$$

$$\mu(x, y) = xe^y \quad \text{○}$$

$$\mu(x, y) = xe^{2y} \quad \text{○}$$



$[4x^3 \sin(y) + y^5 e^x] dx + [x^4 \cos(y) + 5y^4 e^x] dy = 0$ Solve the equation



$$x^4 \cos(y) + y^5 e^x = c \quad \text{○}$$

$$x^4 \sin(y) + y^5 e^x = c \quad \text{●}$$

none of the given answers is true ☐

$$x^4 \cos(y) + y^4 e^x = c \quad \text{○}$$

$$x^4 \sin(y) + y^4 e^x = c \quad \text{○}$$



سؤال 7

صحيح

درجة 1.0 من 1.0

علم السؤال

Solve the equation

$$) + y^5 e^x] dx + [x^4 \cos(y) + 5y^4 e^x] dy = 0$$

$$x^4 \cos(y) + y^5 e^x = c \quad \text{○}$$

$$\checkmark \quad x^4 \sin(y) + y^5 e^x = c \quad \text{●}$$

none of the given answers is
true

$$x^4 \cos(y) + y^4 e^x = c \quad \text{○}$$

$$x^4 \sin(y) + y^4 e^x = c \quad \text{○}$$

الإجابة الصحيحة هي:

$$x^4 \sin(y) + y^5 e^x = c$$

سؤال 8

صحيح



$3(1 + 2 \sin y - 2 \cos y)dx + 2x(\cos y + \sin y)dy = 0$ Solve the equation



$x^3 + 2x^3 \sin y - 2x^3 \cos y = c$ ☒

$x^3 - 2x^3 \sin y - 2x^3 \cos y = c$ ☐

$x^3 - 2x^3 \sin y + 2x^3 \cos y = c$ ☐

None of the given answers is true ☐

$x^3 + 2x^3 \sin y + 2x^3 \cos y = c$ ☐



سؤال 6

صحيح

درجة 1.0 من 1.0

علم السؤال

Which of the following differential equations is NOT exact

$$(e^{-x} + 2y) + (2x + e^{-y})y' = 0 \quad \text{○}$$

$$(e^{-x} - 2y) - (2x + e^{-y})y' = 0 \quad \text{○}$$

None of the given equations ☐

$$\checkmark (e^{-x} + y) - (x + e^{-y})y' = 0 \quad \text{●}$$

$$(e^{-x} + y) + (x + e^{-y})y' = 0 \quad \text{○}$$

الإجابة الصحيحة هي:

$$(e^{-x} + y) - (x + e^{-y})y' = 0$$



سؤال 8

صحيح

درجة 1.0 من 1.0

علم السؤال

Solve the initial value problem

$$x^2 + (2x^2y + 5x + 2y) dy = 0, \quad y(1) = 1$$

✓ ☒ $x^2y^2 + 5xy + x^2 + y^2 = 8$

☐ none of the given answers is true

☐ $x^2y^2 - 5xy + x^2 + y^2 = -2$

☐ $x^2y^2 + 3xy + x^2 + y^2 = 6$

☐ $x^2y^2 - 3xy + x^2 + y^2 = 0$

الإجابة الصحيحة هي:

$$x^2y^2 + 5xy + x^2 + y^2 = 8$$

سؤال 9

صحيح



سؤال 4

صحيح

درجة 1.0 من 1.0

علم السؤال

Find the solution of the initial
value problem

$$y' + p(t)y = 0, \quad y(0) = 2,$$

where

$$p(t) = \begin{cases} -4, & 0 \leq t \leq 2 \\ 4, & t > 2. \end{cases}$$

✓ $y(t) = \begin{cases} 2e^{4t}, & 0 \leq t \leq 2 \\ 2e^{16-4t}, & t > 2. \end{cases}$ ☒

$$y(t) = \begin{cases} 2e^{-4t}, & 0 \leq t \leq 2 \\ 2e^{4t-16}, & t > 2. \end{cases} \quad \text{○}$$

$$y(t) = \begin{cases} 2e^{-3t}, & 0 \leq t \leq 2 \\ 2e^{3t-12}, & t > 2. \end{cases} \quad \text{○}$$

none of the given answers ☐

$$y(t) = \begin{cases} 2e^{3t}, & 0 \leq t \leq 2 \\ 2e^{12-3t}, & t > 2. \end{cases} \quad \text{○}$$

الإجابة الصحيحة هي:

$y(t) = \begin{cases} 2e^{4t}, & 0 \leq t \leq 2 \end{cases}$



سؤال 3

صحيح

درجة 1.0 من 1.0

علم السؤال

Find the solution of the initial
value problem

$$ty' + 3y = t^{7/2}y^{3/2}, \quad y(1) = 16$$

$$y(t) = \frac{4}{t^3(t-2)^2} \quad \text{○}$$

$$y(t) = \frac{4}{t(t-2)^2} \quad \text{○}$$

$$y(t) = \frac{16}{t(t^2-2)^2} \quad \text{○}$$

none of the given answers ○



$$y(t) = \frac{16}{t^3(t^2-2)^2} \quad \text{●}$$

الإجابة الصحيحة هي:

$$y(t) = \frac{16}{t^3(t^2-2)^2}$$



Solve the initial value problem

$$(2xy^2 + 2x + 5y)dx + (2x^2y + 5x + 2y)dy = 0, \quad y(1) = 1$$



$$x^2y^2 + 5xy + x^2 + y^2 = 8 \quad \bullet$$

none of the given answers is true ☐

$$x^2y^2 - 5xy + x^2 + y^2 = -2 \quad \bullet$$

$$x^2y^2 + 3xy + x^2 + y^2 = 6 \quad \bullet$$

$$x^2y^2 - 3xy + x^2 + y^2 = 0 \quad \bullet$$

$4(1 + 2\sin y - 2\cos y)dx + 2x(\cos y + \sin y)dy = 0$ Solve the equation

None of the given answers is true ☐

$$x^4 + 2x^4 \sin y + 2x^4 \cos y = c \quad \bullet$$

$$x^4 - 2x^4 \sin y + 2x^4 \cos y = c \quad \bullet$$

$$x^4 - 2x^4 \sin y - 2x^4 \cos y = c \quad \bullet$$

$$x^4 + 2x^4 \sin y - 2x^4 \cos y = c \quad \bullet$$



سؤال 10

صحيح

درجة 1.0 من 1.0

علم السؤال

الإجابة الصحيحة هي: $x^4 + 2x^4 \sin y - 2x^4 \cos y = c$

Which of the following functions can be used as an integrating factor for the non-exact equation

$$\left(\frac{\sin x}{x} + 6e^{-3y} \sin y \right) dx + \left(3xe^{-3y} \cos y - \frac{3 \cos x}{x} \right) dy = 0$$

$$\mu(x, y) = xe^{-3y} \quad \bullet$$

$$\mu(x, y) = xe^{-2y} \quad \bullet$$

$$\mu(x, y) = xe^{3y} \quad \bullet$$

none of the given answers is true ☐

$$\mu(x, y) = xe^{2y} \quad \bullet$$



سؤال 9

صحيح

درجة 1.0 من 1.0

علم السؤال

الإجابة الصحيحة هي: $\mu(x, y) = xe^{3y}$

✓ $3y(x^2 + 1)dx + (x^3 + 3x + 8y)dy = 0, \quad y(0) = 1$ Solve the initial value problem $x^3y + 4xy + 4y^2 = 4$ ☐ $x^3y + 3xy + 4y^2 = 4$ ☒ $x^3y - 3xy + 4y^2 = 4$ ☐ $x^3y - 4xy + 4y^2 = 4$ ☐ none of the given answers is true ☐	سؤال 8 صحيح درجة 1.0 من 1.0 علم السؤال
الإجابة الصحيحة هي: $x^3y + 3xy + 4y^2 = 4$	
✓ $[2x \sin(2y) - y^2e^{-x}]dx + [2x^2 \cos(2y) + 2ye^{-x}]dy = 0$ Solve the equation none of the given answers is true ☐ $x^2 \cos(2y) + y^3e^{-x} = c$ ☐ $x^2 \sin(2y) + y^2e^{-x} = c$ ☒ $x^2 \cos(2y) + y^2e^{-x} = c$ ☐ $x^2 \sin(2y) + y^3e^{-x} = c$ ☐	سؤال 7 صحيح درجة 1.0 من 1.0 علم السؤال
الإجابة الصحيحة هي: $x^2 \sin(2y) + y^2e^{-x} = c$	
✓ ?Which of the following differential equations is NOT exact $(e^x + 2y) + (2x + e^{-y})y' = 0$ ☐ None of the given equations ☐ $(e^x + y) - (x + e^{-y})y' = 0$ ☒ $(e^x - 2y) - (2x + e^{-y})y' = 0$ ☐ $(e^x + y) + (x + e^{-y})y' = 0$ ☐	سؤال 6 صحيح درجة 1.0 من 1.0 علم السؤال
الإجابة الصحيحة هي: $(e^x + y) - (x + e^{-y})y' = 0$	
✓ ?Which of the following differential equations is exact $(4x - 3y) + (3x + 2y)y' = 0$ ☐ $(5x + 4y) + (3x + 2y)y' = 0$ ☐ None of the given equations ☐ $(4x - 3y) - (3x + 2y)y' = 0$ ☒ $(5x - 4y) - (3x + 2y)y' = 0$ ☐	سؤال 5 صحيح درجة 1.0 من 1.0 علم السؤال
الإجابة الصحيحة هي: $(4x - 3y) - (3x + 2y)y' = 0$	

سؤال 4

صحيح

درجة 1.0 من 1.0

علم السؤال

Find the solution of the initial value problem $y' + p(t)y = 0$, $y(0) = 3$, where

$$p(t) = \begin{cases} 3, & 0 \leq t \leq 1 \\ -3, & t > 1. \end{cases}$$

$$y(t) = \begin{cases} 3e^{2t}, & 0 \leq t \leq 1 \\ 3e^{4-2t}, & t > 1. \end{cases} \quad \text{○}$$

$$y(t) = \begin{cases} 3e^{3t}, & 0 \leq t \leq 1 \\ 3e^{6-3t}, & t > 1. \end{cases} \quad \text{○}$$

$$y(t) = \begin{cases} 3e^{-3t}, & 0 \leq t \leq 1 \\ 3e^{3t-6}, & t > 1. \end{cases} \quad \text{●}$$

$$y(t) = \begin{cases} 3e^{-2t}, & 0 \leq t \leq 1 \\ 3e^{2t-4}, & t > 1. \end{cases} \quad \text{○}$$

none of the given answers ○



$$y(t) = \begin{cases} 3e^{-3t}, & 0 \leq t \leq 1 \\ 3e^{3t-6}, & t > 1. \end{cases} \quad \text{الإجابة الصحيحة هي:}$$

سؤال 3

صحيح

درجة 1.0 من 1.0

علم السؤال

Find the solution of the initial value problem $ty' + 2y = 6t^4y^{3/2}$, $y(1) = 1$

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

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

$$y(t) = \frac{1}{t^2(t^3 - 2)^2} \quad \text{●}$$

none of the given answers ○

$$y(t) = \frac{1}{t(t^3 - 2)^2} \quad \text{○}$$



$$y(t) = \frac{1}{t^2(t^3 - 2)^2} \quad \text{الإجابة الصحيحة هي:}$$

سؤال 2

صحيح

درجة 1.0 من 1.0

علم السؤال

Find the solution of the differential equation $y' + 2y = \frac{2 \sin(4t)}{y}$.



$y^2 = \frac{1}{5} [\sin(4t) - 2 \cos(4t)] + ce^{-2t}$ ☐

$y^2 = \frac{1}{2} [\sin(4t) - \cos(4t)] + ce^{-4t}$ ☒

$y^2 = \frac{1}{2} [\cos(4t) - \sin(4t)] + ce^{-4t}$ ☐

$y^2 = \frac{1}{5} [\cos(4t) - 2 \sin(4t)] + ce^{-2t}$ ☐

none of the given answers ☐

الإجابة الصحيحة هي: $y^2 = \frac{1}{2} [\sin(4t) - \cos(4t)] + ce^{-4t}$

سؤال 1

صحيح

درجة 1.0 من 1.0

علم السؤال

The solution of the IVP $(t-1)y' + \cos t y = \frac{e^t}{t}$, $y(3) = 0$ exists in the interval



$(1, \infty)$ ☒

$(0, \infty)$ ☐

$(-\infty, 0)$ ☐

$(0, 1)$ ☐

none of the given answers is true ☐

الإجابة الصحيحة هي: $(1, \infty)$