شكراً لتحميلك هذا الملف من موقع المناهج الإماراتية

حل مراجعة امتحانية وفق الهيكل الوزاري النخبة

تاريخ نشر الملف على موقع المناهج: 2023-12-04 12:09:10 | اسم المدرس: طارق علي

التواصل الاجتماعي بحسب الصف الثاني عشر المتقدم

روابط مواد الصف الثاني عشر المتقدم على تلغرام

التربية الاسلامية	اللغة العربية	اللغة الانجليزية	الرياضيات

المزيد من الملفات بحسب الصف الثاني عشر المتقدم والمادة رياضيات في الفصل الأول

1	أسئلة امتحان تحريبي متبوع بالإجابات وفق الهيكل الوزاري
2	المراجعة النهائية اختيار من متعدد
3	الإجابات النموذجية لتجميعة أسئلة امتحان وفق الهيكل الوزاري
4	نموذج اختبار تحريبي ثاني
5	نموذج اختبار تحريبي أول


Grade
12
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End of Term 1- 2023
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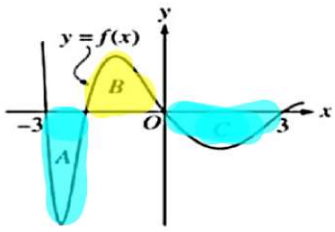


$\int_{-3}^{3} f(x)\,dx + \int_{-3}^{3} 1\,dx$

$-2 - 2 - 2 + x\Big|_{-3}^{3}$

The regions A, B, and C in the figure above are bounded by the graph of the function f and the x-axis. If the area of each region is 2, what is the value of $\int_{-3}^{3} (f(x) + 1)dx$?

a. -2

b. -1

c. 4

$-2 + F(3) - F(-3)$

$-2 + 3 - (-3)$

$-2 + 3 + 3 = 4$

What is the volume of the solid generated by rotating about the x-axis the region enclosed by the curve $y=\sec x$ and the lines $x=0$, $y=0$, and $x = \frac{\pi}{3}$?

a. $\frac{\pi}{\sqrt{3}}$

b. π

c. $\pi\sqrt{3}$

d. $\frac{8\pi}{3}$

$V = \pi \int (R^2 - r^2)\,dx$

$V = \int A\,dx = \int R^2\,dx$

$V = \pi \int_0^{\frac{\pi}{3}} (\sec x)^2 = \pi \int_0^{\frac{\pi}{3}} \sec^2 x\,dx$

$\pi \tan x \Big|_0^{\frac{\pi}{3}} = F\left(\frac{\pi}{3}\right) - F(0)$

$\pi \left[\tan\frac{\pi}{3} - \tan 0\right] = \pi\sqrt{3}$

Which of the following is a solution to the differential equation $y'' - 4y = 0$?

a) $y = e^{2x}$ → $y' = 2e^{2x}$, $y'' = 4e^{2x}$ → $4e^{2x} - 4e^{2x} = 0$ ✓

b. $y = 2e^{x}$

c. $y = sin(2x)$

d. $y = cos(2x)$

Which of the following is an antiderivative of $3\sec^2 x + 2$?

a. 3 tan x

b) 3 tan x + 2x

c. 3 sec x + 2x

d. $\sec^3 x + 2x$

$\int (3\sec^2 x + 2)\,dx$

$3\tan x + 2x + C$

Population y grows according to the equation $\frac{dy}{dt} = ky$, where k is a constant and t is measured in years. If the population doubles every 10 years, then the value of k is

$y = 2 \rightarrow t = 10$

$\frac{dy}{y} = k\,dt \Rightarrow \int \frac{dy}{y} = \int k\,dt$

$\ln|y| = kt + c$

$y = c\,e^{kt}$

$2 = c\,e^{10k}$

$\ln 2 = \ln e^{10k}$

$\ln 2 = 10k \rightarrow k = \frac{\ln 2}{10}$

$k = 0.06$

a. 0.069

b. 0.200

c. 0.301

d. 3.322

If $G(x)$ is an antiderivative for $f(x)$ and $G(2) = -7$, then $G(4) =$

$* \int_2^4 F(x) = F(4) - F(2)$

$F(4) = \int_2^4 F(x) + F(2)$

$= \int_2^4 F(x) - 7$

a. $-7 + f'(4)$

b. $\int_2^4 f(t)dt$

c. $\int_2^4 (-7 + f(t))dt$

d. $-7 + \int_2^4 f(t)dt$

An antiderivative for $\frac{1}{x^2-2x+2}$ is

Completing The Square

$(x-1)^2 - 1^2 + 2 = 1 + (x-1)^2$

$\int \frac{1}{1+(x-1)^2}\,dx$ $\tan^{-1} = \frac{1}{1+x^2}$

$= \tan^{-1}(x-1) + c$

a. $\ln(x^2-2x+2)$

b. $\ln\left|\frac{x-2}{x+1}\right|$

c. $\text{arcsec}(x-1)$

$\arctan(x-1) + c$

d. $\arctan(x-1)$

The rate of change of the volume, V, of water in a tank with respect to time, t, is directly proportional to the square root of the volume. Which of the following is a differential equation that describes this relationship?

$\frac{dV}{dt}$

rate = derivative

directly مرتبط

a. $V(t) = k\sqrt{t}$

b. $V(t) = k\sqrt{V}$

c. $\frac{dV}{dt} = \frac{k}{\sqrt{V}}$ inverse $\frac{dV}{dt} = k\sqrt{V}$

d. $\frac{dV}{dt} = k\sqrt{V}$

If the average value of the function f over the closed interval $[2, 4]$ is 3 and if $f(x) \geq 0$ for all x in $[2, 4]$, what is the area of the region enclosed by the graph of $y = f(x)$, the lines $x = 2$ and $x = 4$, and the x-axis?

a. 12

b. 6

c. 3

d. 3/2

The function f is continuous and $\int_0^8 f(u)du = 6$. What is the value of $\int_1^3 xf(x^2-1)dx$?

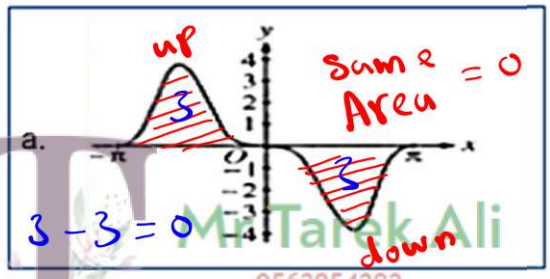
a. 24

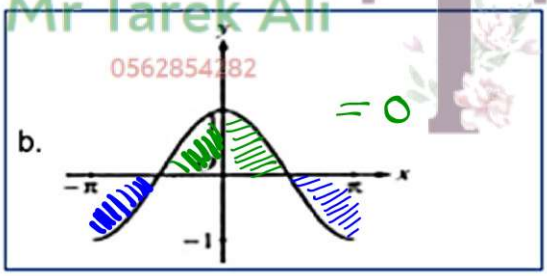
b. 3

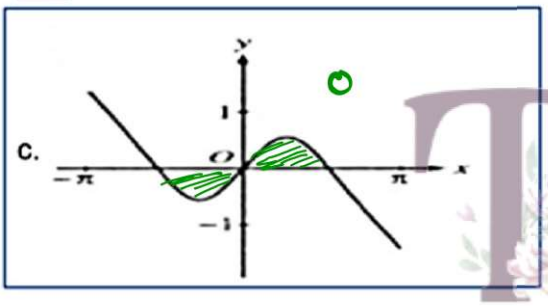
c. 6

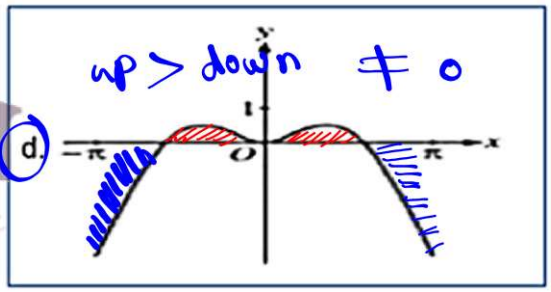
d. 12

The graphs of four functions are shown below. Which function has a nonzero average value over the closed interval $[-\pi, \pi]$?

a. 

b. 

c. 

d. 

The area of the region enclosed by the graphs of $y = x^2$ and $y = x$ is

1) intersection $x^2 = x \rightarrow x^2 - x = 0$

Mode → equation → 2 → 2

$x = 1$, $x = 0$

$x = \frac{1}{2}$

$\left(\frac{1}{2}\right)^2 = \frac{1}{4}$

$\left(\frac{1}{2}\right) > \frac{1}{4}$

$x > x^2$

a. 1/6

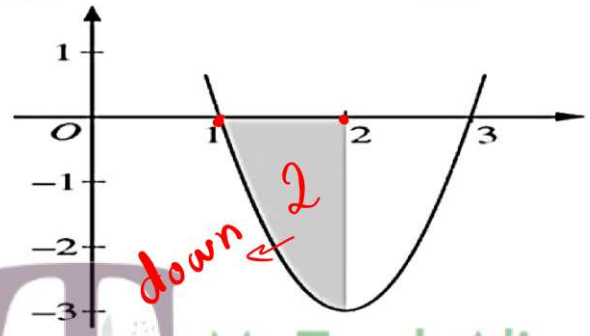
b. 1/3

c. 1/2

d. 5/6

$$\int_0^1 (x - x^2)\,dx$$

$\frac{1}{6}$



Graph of f

The figure above shows the graph of the function f. If $g(x) = \int_1^x f(t)\,dt$ and the shaded region has an area of 2, what is the value of $g(2)$?

a. -3

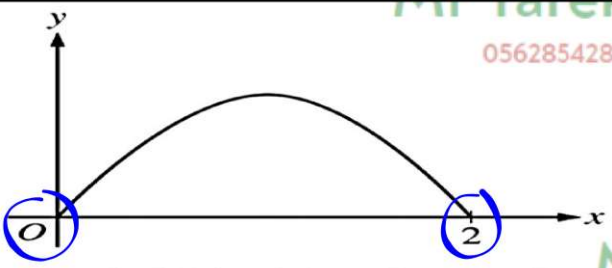
b. -2

c. 0

d. 1

$g(2) = \int_1^2 f(t)$

$= -2$ down



$A = Bh$

The base of a solid is the region bounded by a portion of the graph of $y = \sin\left(\frac{\pi}{2}x\right)$ and the x-axis, as shown in the figure above. For the solid, each cross section perpendicular to the x-axis is a rectangle of height 3. Which of the following expressions gives the volume of the solid?

$h = 3$, $B = \sin\left(\frac{\pi}{2}x\right)$

a. $\int_0^2 3\sin\left(\frac{\pi}{2}x\right)dx$

b. $\int_0^2 3\sin^2\left(\frac{\pi}{2}x\right)dx$

c. $\int_0^2 3\pi\sin\left(\frac{\pi}{2}x\right)dx$

d. $\int_0^2 3\pi\sin^2\left(\frac{\pi}{2}x\right)dx$

$\int_0^2 A\,dx = \int_0^2 Bh\,dx$

$\int_0^2 3\sin\left(\frac{\pi}{2}x\right)$

What is the area enclosed by the curves $y = x^3 - 8x^2 + 18x - 5$ and $y = x + 5$? → 8

(1) intersection $x^3 - 8x^2 + 18x - 5 = x + 5$

$x^3 - 8x^2 + 17x - 10 = 0$

Mode → equation → 2 → 3

$x = 5$, $x = 2$, $x = 1$

1 → 2 (+) 2 → 5

$\int_1^2 (x^3 - 8x^2 + 18x - 5) - (x + 5)\,dx +$

$\int_2^5 (x + 5) - (x^3 - 8x^2 + 18x - 5)\,dx = 11.83$

a. 10.667

b. 11.833

c. 14.583

d. 21.333

Graph of f

The graph of the differentiable function f is shown in the figure above. Let h be the function defined by $h(x) = \int_0^x f(t)\,dt$. Which of the following correctly orders $h(2)$, $h'(2)$, and $h''(2)$?

$h(2) = \int_0^2 f(x)\,dx$ = Big Area *

a. $h'(2) < h(2) < h''(2)$

b. $h'(2) < h''(2) < h(2)$

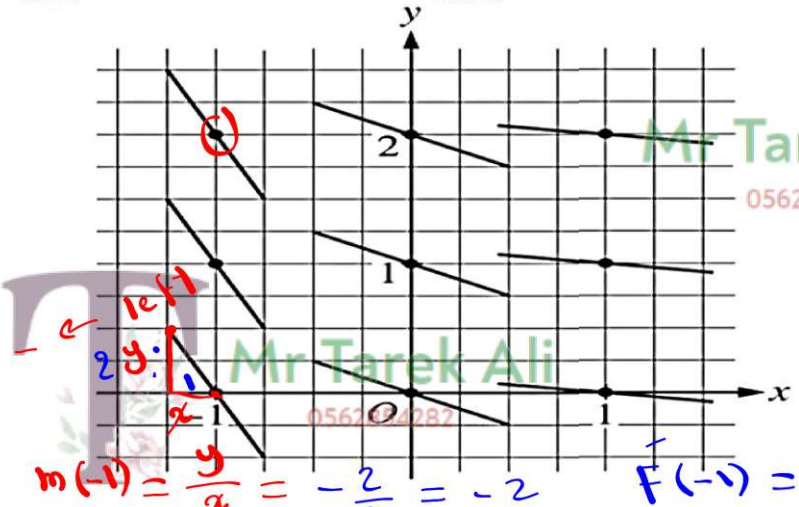
$h'(2) = f(2) = 0$ *

c. $h''(2) < h(2) < h'(2)$

$h''(2) = f'(2) = (-)$ *

d. $h''(2) < h'(2) < h(2)$

$- < 0 < +$



$m(-1) = \frac{y}{x} = \frac{-2}{1} = -2$ $F(-1) = -2$

A slope field for a differential equation is shown in the figure above. If $y = f(x)$ is the particular solution to the differential equation through the point $(-1,2)$ and $h(x) = 3x \cdot f(x)$, then $h'(-1) =$

a. -6

b. -2

c. 1

d. 12

$h(x) = 3x \cdot F(x)$ product rule

$h'(x) = 3x \cdot F'(x) + 3F(x) =$

$3(-1) \cdot F(-1) + 3F(-1) \rightarrow (-1,2)$

$-3(-2) + 3(2)$ $F(-1) = 2$

$6 + 6 = 12$

A solid has a rectangular base that lies in the first quadrant and is bounded by the x- and y-axes and the lines $x = 2$ and $y = 1$. The height of the solid above the point (x, y) is $1 + 3x$. Which of the following is a Riemann sum approximation for the volume of the solid?

[0,2]

$A = \int_a^b \Delta x \cdot F(x)\,dx$

$\Delta x = \text{Height} = 1+3x = \frac{b-a}{n} = \frac{2-0}{n} = \frac{2}{n}$

$\sum_{i=1}^{n} (a + \Delta x \cdot i)\,\Delta x$

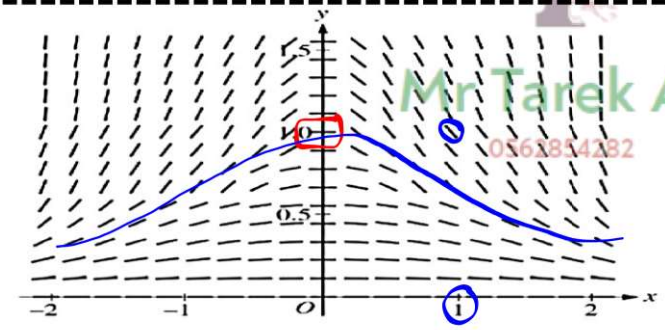
$\Delta x = \frac{2}{n}$

a. $2\sum_{i=1}^{n} \frac{1}{n}\left(1+\frac{3i}{n}\right)$

b. $2\sum_{i=1}^{n} \frac{i}{n}\left(1+\frac{3i}{n}\right)$

c. $\sum_{i=1}^{n} \frac{2}{n}\left(1+\frac{6i}{n}\right)$

d. $\sum_{i=1}^{n} \frac{2i}{n}\left(1+\frac{6i}{n}\right)$



at $x = 0$, $y = 1$

$m = 0$

Horizontal

The slope field for a certain differential equation is shown above. Which of the following could be a solution to the differential equation with the initial condition $y(0) = 1$?

a. $y = 1 - x^2$

b. $y = e^x$

c. $y = \sqrt{1-x^2}$

d. $y = \frac{1}{1+x^2}$

If $f'(x) = \frac{2}{x}$ and $f(\sqrt{e}) = 5$ then $f(e) =$

subtract Big

$* 5 + \int_{\sqrt{e}}^{e} \frac{2}{x}\,dx$

a. 2

$F(x) = \int f(x) = \int \frac{2}{x}\,dx = 2\int \frac{1}{x}\,dx$

b. ln 25

$F(x) = 2\ln x + C$

$F(\sqrt{e}) = 5 = 2\ln\sqrt{e} + C$

c. $5 + \frac{2}{e} - \frac{2}{e^2}$

$5 = \ln(\sqrt{e})^2 + C$

$5 = \ln e + C$

d. 6

$5 = 1 + C \rightarrow C = 4$

$F(x) = 2\ln x + 4 \rightarrow F(e) = 2\ln e + 4 = 2 + 4 = 6$

For any real number x, $\lim_{h\to 0} \frac{\sin(2(x+h)) - \sin(2x)}{h} =$

$\frac{dy}{dx}$ $\frac{F(x+h) - F(x)}{h}$

a. 0

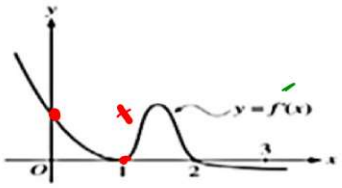
b. 1

$F(x) = \sin 2x$

c. $\cos(2x)$

$F(x) = 2\cos 2x$

d. $2\cos(2x)$



The graph of f', the derivative of the function f, is shown above. If $f(0) = 0$, which of the following must be true?

I. $f(0) > f(1)$
II. $f(2) > f(1)$
III. $f(1) > f(3)$

a. I only

b. II only

c. I and II only

d. II and III only

Let f and g be continuous functions such that $\int_0^{10} f(x)dx = 21$, $\int_0^{10} \frac{1}{2}g(x)dx = 8$, and $\int_3^{10} (f(x) - g(x))dx = 2$. What is the value of $\int_0^3 (f(x) - g(x))dx$?

a. 3

b. 7

c. 11

d. 15

The number of bacteria in a container increases at the rate of $R(t)$ bacteria per hour. If there are 1000 bacteria at time $t = 0$, which of the following expressions gives the number of bacteria in the container at time $t = 3$ hours?

a. $R(3)$

b. $1000 + R(3)$

c. $\int_0^3 R(t)\,dt$

d. $1000 + \int_0^3 R(t)\,dt$

$R(0) = 1000$ $R(3) = ??$ Big

$1000 + \int_0^3 R(t)$ Add

or

$\int_0^3 R(t)\,dt = R(3) - R(0)$

$R(0) + \int_0^3 R(t)\,dt = R(3)$

$1000 + \int_0^3 R(t)\,dt = R(3)$