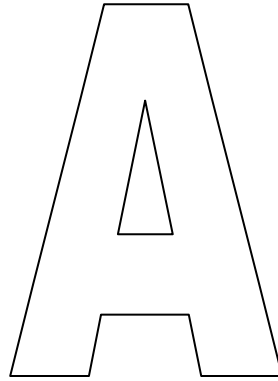


math 202.
Calculus 2.

First Exam

Date: Saturday 21 / 4 / 1432 H.

Time: from 21:00 to 22:30.



- تأكد من أن رمز نموذج الإجابة لديك هو A .
- أكتب اسمك على هذا النموذج ثم تأكد من تعبئة جميع بيانات نموذج الإجابة خاصة رقمك الجامعي و بقلم الرصاص.
- تأكد من تعبئة نموذج الحضور بصورة صحيحة.
- أجب عن جميع الأسئلة الآتية بتظليل الخيار الصحيح في نموذج الإجابة بقلم الرصاص.
- ممنوع استخدام الآلة الحاسبة.

Q1. $\sum_{k=1}^6 (3 - k^2) =$			
(A) -75	(B) -73	(C) -190	(D) -109

Q2. The definite integral which expressed the limit: $\lim_{\ P\ \rightarrow 0} \sum_{k=1}^n (c_k^5 - 5c_k) \Delta x_k$, where P is a partition of $[1, 4]$, is			
(A) $\int_1^4 (5x^4 - 5) dx$	(B) $\int_1^4 (c^5 - 5c) dx$	(C) $\int_1^4 (x^5 - 5x) dx$	(D) $\int_4^1 (x^5 - 5x) dx$

Q3. If f is integrable and $\int_0^3 f(z) dz = 3$ and $\int_0^4 f(z) dz = 7$, then $\int_3^4 f(z) dz =$			
(A) 4	(B) 10	(C) -4	(D) 21

Q4. If $g(x) \leq \frac{1}{3}$ for all $x \in [2, 14]$, then			
(A) $5 \leq \int_2^{14} g(x) dx$	(B) $\int_2^{14} g(x) dx \leq 12$	(C) $9 \leq \int_2^{14} g(x) dx$	(D) $\int_2^{14} g(x) dx \leq 4$

Q5. If $y = \int_1^{x^2} \cos t \, dt$, then $\frac{dy}{dx} =$			
(A) $2x \cos x^2$	(B) $-2x \cos x^2$	(C) $-2x \sin x^2$	(D) $2x \sin x^2$

Q6. $\int_{-\frac{\pi}{3}}^{\frac{\pi}{3}} \frac{x^3}{x^{10} + x^6 + \frac{\pi}{3}} dx =$			
(A) 0	(B) $\frac{7\pi}{3}$	(C) $\frac{17\pi}{3}$	(D) $\frac{71\pi}{3}$

Q7. The area of the region between the x -axis and the graph of $f(x) = 3x^2 - 3x$ from $x = 0$ to $x = 2$ is			
(A) 12	(B) 13	(C) 2	(D) 3

السؤال رقم 8 هو تكرار للسؤال رقم 7 و يجب أن تجيب عليه للحصول على درجته

Q8.

The area of the region between the x -axis and the graph of $f(x) = 3x^2 - 3x$ from $x = 0$ to $x = 2$ is

(A)

12

(B)

13

(C)

2

(D)

3

Q9.

$$\int \frac{(\sqrt{3} + \sqrt{x})^3}{\sqrt{x}} dx =$$

(A)

$$\sqrt{3}x + \frac{(\sqrt{x})^4}{4} + C$$

(B)

$$\frac{(3 + \sqrt{x})^4}{2\sqrt{x}} + C$$

(C)

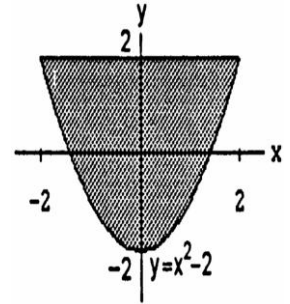
$$\frac{(\sqrt{3} + \sqrt{x})^4}{2} + C$$

(D)

$$\frac{(\sqrt{3} + \sqrt{x})^4}{2\sqrt{x}} + C$$

Q10.

The area of the region between the curves of $f(x) = 2$ and $g(x) = x^2 - 2$ is



(A)

$\frac{20}{3}$

(B)

$\frac{32}{3}$

(C)

$\frac{7}{5}$

(D)

$\frac{7}{3}$

السؤال رقم 11 هو تكرار للسؤال رقم 10 و يجب أن تجيب عليه للحصول على درجته

Q11.

The area of the region between the curves of $f(x) = 2$ and $g(x) = x^2 - 2$ is

(A)

$\frac{20}{3}$

(B)

$\frac{32}{3}$

(C)

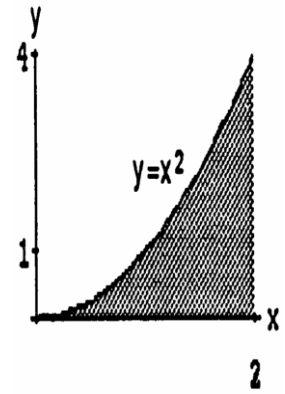
$\frac{7}{5}$

(D)

$\frac{7}{3}$

Q12.

The volume of the solid generated by revolving the region bounded by the lines $y = 0$, $x = 2$, and the curve $y = x^2$ about the x -axis is



(A)

$$\frac{32\pi}{5}$$

(B)

$$\frac{31\pi}{5}$$

(C)

$$\frac{29\pi}{5}$$

(D)

$$\frac{28\pi}{5}$$

السؤال رقم 13 هو تكرار للسؤال رقم 12 و يجب أن تجيب عليه للحصول على درجته

Q13.

The volume of the solid generated by revolving the region bounded by the lines $y = 0$, $x = 2$, and the curve $y = x^2$ about the x -axis is

(A)

$$\frac{32\pi}{5}$$

(B)

$$\frac{31\pi}{5}$$

(C)

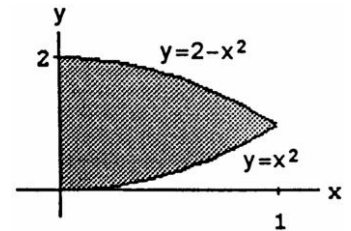
$$\frac{29\pi}{5}$$

(D)

$$\frac{28\pi}{5}$$

Q14.

The volume of the solid generated by revolving the region bounded by the curves $y = 2 - x^2$, $y = x^2$, and the line $x = 0$, about the y -axis is



Hint: Use the shell method

(A)

$$4\pi$$

(B)

$$3\pi$$

(C)

$$2\pi$$

(D)

$$\pi$$

السؤال رقم 15 هو تكرار للسؤال رقم 14 و يجب أن تجيب عليه للحصول على درجته

Q15.

The volume of the solid generated by revolving the region bounded by the curves $y = 2 - x^2$, $y = x^2$, and the line $x = 0$, about the y -axis is

(A)

$$4\pi$$

(B)

$$3\pi$$

(C)

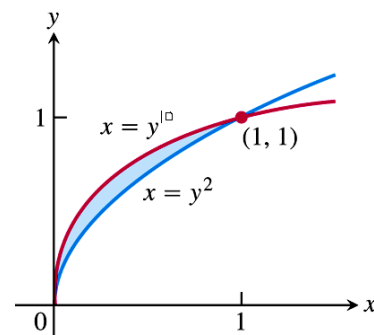
$$2\pi$$

(D)

$$\pi$$

Q16.

The total area of the region bounded by the curves $x = y^2$ and $x = y^{10}$ is



(A)

$$\frac{7}{33}$$

(B)

$$\frac{8}{33}$$

(C)

$$\frac{9}{33}$$

(D)

$$\frac{10}{33}$$

السؤال رقم 17 هو تكرار للسؤال رقم 16 و يجب أن تجيب عليه للحصول على درجته

Q17.

The total area of the region bounded by the curves $x = y^2$ and $x = y^{10}$ is

(A)

$$\frac{7}{33}$$

(B)

$$\frac{8}{33}$$

(C)

$$\frac{9}{33}$$

(D)

$$\frac{10}{33}$$

Q18.

If f is an even continuous function and $\int_{-3}^3 f(x)dx = 6$, then $\int_0^3 3f(x)dx =$

(A)

$$9$$

(B)

$$20$$

(C)

$$8$$

(D)

$$12$$

Q19.

If f' is continuous on $[1, 2]$, then $\int_1^2 f'(t)dt =$

(A)

$$f(1) - f(2)$$

(B)

$$f'(2)$$

(C)

$$f(2) - f(1)$$

(D)

$$f'(1)$$

Q20.

The definite integral $\int_1^5 f(x)dx$ exists if f is

(A)

bounded on $[1, 5]$

(B)

odd on $[1, 5]$

(C)

even on $[1, 5]$

(D)

continuous on $[1, 5]$