# **Multiple Choice Question Assignment** Assignment Group El1-M3M4

### **Subject: Mathematics for Engineering II**

B)  $f'(x) = -2\sin(x) - 6\csc(x)$ 

B)  $g'(z) = 10 \cot(z) - 2 \tan(z)$ 

B)  $f'(w) = \sec^3(w) + \sec(w) \tan^2(w)$ 

B)  $h'(t) = 3t^2 - 2t \cos(t) - t \cos(t)$ 

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B) មិនមាន

ចូររកចម្លើយនៃដេរីវេរបស់អនុគមន៍ខាងក្រោម៖ I.

1) 
$$f(x) = 2\cos(x) - 6\sec(x) + 3$$

A) 
$$f'(x) = -2\sin(x) - 6\sec(x)\tan(x)$$

A) 
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C) 
$$f'(x) = -2\sin(x) - 6\tan(x)$$

2) 
$$g(z) = 10 \tan(z) - 2 \cot(z)$$

A) 
$$g'(z) = 10 \csc^2(z) + 2 \sec^2(z)$$

C) 
$$g'(z) = 10 \sec^2(z) + 2 \csc^2(z)$$

$$3) f(w) = tan(w) sec(w)$$

A) 
$$f'(w) = sec^2(w) + sec^2(w) tan(w)$$

C) 
$$f'(w) = \csc^3(w) + \csc(w) \tan^2(w)$$

4) 
$$h(t) = t^3 - t^2 \sin(t)$$

A) 
$$h'(t) = 3t^2 - 2t \cos(t) - t^2 \cos(t)$$

C) 
$$h'(t) = 3t^2 - 2t \sin(t) - t^2 \cos(t)$$

$$5) y = 6 + 4\sqrt{x}\csc(x)$$

A) 
$$y' = 2x^{-\frac{1}{2}}\csc(x) - 4\sqrt{x}\csc(x)\cot(x)$$
 B)  $y' = \frac{1}{2}x^{-\frac{1}{2}}\csc(x) - 4\sqrt{x}\csc(x)\tan(x)$ 

C) 
$$y' = 6 + 4\sqrt{x}\csc(x)\cot(x)$$

6) 
$$Z(v) = \frac{v + \tan(v)}{1 + \csc(v)}$$

$$A) \ Z'(v) = \frac{1 + \cot(v)}{\left(1 + \csc(v)\right)^2}$$

C) 
$$Z'(v) = \frac{\left(1 + \sec^2(v)\right)\left(1 + \csc(v)\right) + \left(v + \tan(v)\right)}{\left(1 + \csc(v)\right)^2}$$

$$D) \quad Z'(v) = \frac{\left(1 + \sec^2\left(v\right)\right)\left(1 + \csc\left(v\right)\right) + \csc\left(v\right)\cot\left(v\right)\left(v + \tan\left(v\right)\right)}{\left(1 + \csc\left(v\right)\right)^2}$$

ចូររកចម្លើយនៃដេរីវេរបស់អនុគមន៍ implicit ខាងក្រោម៖ II.

7) 
$$7y^2 + \sin(3x) = 12 - y^4$$

A) 
$$y' = \frac{-3\cos(3x)}{14y + 4y^3}$$

B) 
$$y' = \frac{-\cos(3x)}{12 - y^2}$$

$$C) y' = \frac{-3\cos(3x)}{y+y^3}$$

D) មិនមានទេ

**8)** 
$$\tan(x^2y^4) = 3x + y^2$$

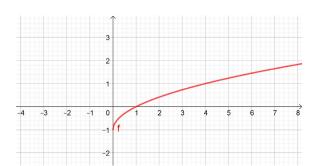
A) 
$$y' = \frac{3 - 2xy^4 \sec^2(x^2y^4)}{4x^2y^3 \sec^2(x^2y^4) - 2y}$$

B)  $y' = \frac{-2xy^4 \sec^2(x^2y^4)}{4x^2y^3 \sec^2(x^2y^4) - 2y}$ 

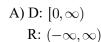
C) 
$$y' = \frac{3 - 2xy^4 \sec^2(x^2y^4)}{-2y}$$

D) មិនមានទេ

#### III. Use the graph to determine the function's domain and range.



9)



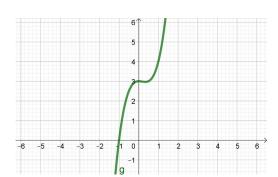
B) D: 
$$[-\infty, \infty)$$
  
R:  $(-1, \infty)$ 

C) D: 
$$[0,\infty)$$

D) D: 
$$[0, \infty)$$

R: 
$$(-1,\infty)$$

$$R: [0, \infty)$$



10)

A) 
$$D:(2,0)$$

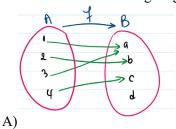
B) D: 
$$(-2,0)$$

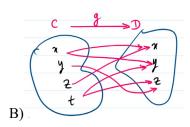
$$R:(-\infty,\infty)$$

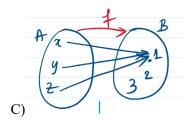
C) D: 
$$(-\infty, \infty)$$
 D) D:  $(-2, -2)$   
R:  $(-\infty, \infty)$  R:  $(-2, 6)$ 

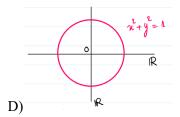
D) D: 
$$(-2, -2)$$

- 11) Give the domain and range of the relation:  $\{(11,-3),(2,-2),(2,0),(6,2),(18,4)\}$ 
  - A) domain:  $\{-3, -2, 2, 4\}$ ; range:  $\{11, 6, 2, 18\}$
  - B) domain:  $\{11,6,2,18\}$ ; range:  $\{-3,-2,2,4\}$
  - C) domain:  $\{-3, -2, 0, 2, 4\}$ ; range:  $\{11, 6, 2, 18\}$
  - D) domain:  $\{11,6,2,18\}$ ; range:  $\{-3,-2,0,2,4\}$
- Which of the following diagram is a function?









- IV. Determine whether the given function is even, odd, or neither
  - 13)  $f(x) = 5x^2 + x^4$ 
    - A) Odd

B) Even

C) Neither

- 14)  $f(x) = -5x^5 + x^3$ 
  - A) Even

B) Odd

C) Neither

- A) Even 15)  $f(x) = x^4 x^3$ 
  - A) Odd

B) Neither

- C) Even
- V. Evaluate the piecewise function at the given value of the independent variable.
  - 16)  $f(x) = \begin{cases} 3x + 1 & \text{if } x < -1 \\ -2x 5 & \text{if } x \ge -1 \end{cases}$ ; f(2)

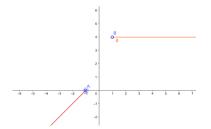
- D) 1
- A) -9 B) -8 C) -3

  17)  $f(x) = \begin{cases} -x 4 & \text{if } x < 3 \\ x^2 7 & \text{if } 3 \le x \le 10; \ f(4) \\ \frac{120}{x} + 5 & \text{if } x > 10 \end{cases}$ 

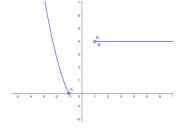
  - A) -9 B) -8 C) -3
- D) 1

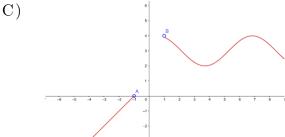
- VI. Which one is the graph of the function?
  - 18)  $f(x) = \begin{cases} x+1 & \text{if } x < -1 \\ 4 & \text{if } x > -1 \end{cases}$

A)

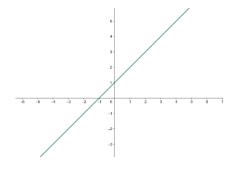


B)



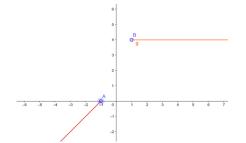


C)

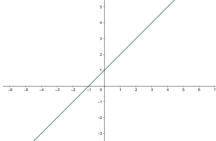


19)  $f(x) = \begin{cases} x+1 & \text{if } x < -1 \\ 4 & \text{if } x > -1 \\ 0 & \text{if } -1 \le x \le 1 \end{cases}$ 

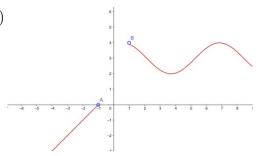
A)



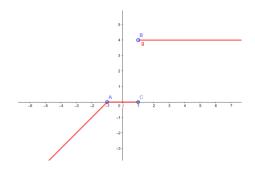
B)



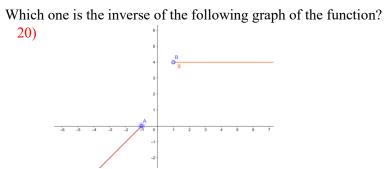
C)



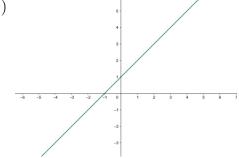
D)



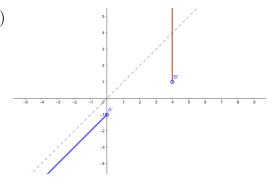
VII.

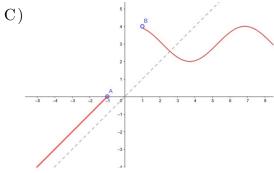


A)

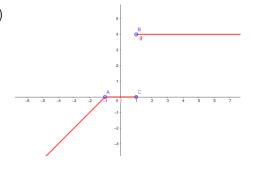


B)

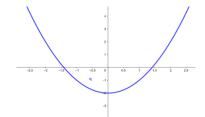




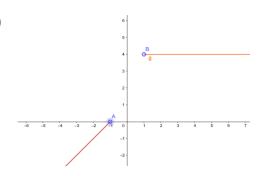
D)



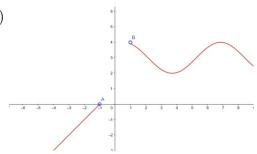
21)

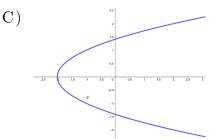


A)

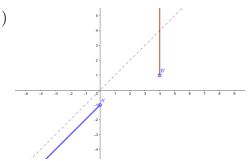


B)





D)



#### ចូររកអនុគមន៍បណ្តាក់ ក្នុងករណីនីមួយៗខាងក្រោម VIII.

**22)** 
$$f(x) = 2x^2$$

22) 
$$f(x) = 2x^2$$
 និង  $g(x) = \frac{1}{x-1}$  ។ គណនា  $f \circ g$  ?

A) 
$$2\frac{1}{(x-1)^2}$$
 B)  $-8$  C)  $2(x-1)^2$  D)  $\frac{(x-1)^2}{2}$ 

C) 
$$2(x-1)^2$$

D) 
$$\frac{(x-1)^2}{2}$$

**23)** 
$$f(x) = x^2$$

23) 
$$f(x) = x^2$$
 និង  $g(x) = \frac{1}{\sec x - 1}$  ។ គណនា  $g \circ f$  ?

A) 
$$(\sec^2 x - 1)^{-}$$

$$A) \ (\sec^2 x - 1)^{-1} \qquad B) \ \sin\!\left(\!\frac{1}{(\sec x - 1)^2}\right) \qquad C) \ 2\frac{1}{(x - 1)^2} \qquad D) \ (\sec x^2 - 1)^{-1}$$

C) 
$$2\frac{1}{(x-1)^2}$$

D) 
$$(\sec x^2 - 1)^{-1}$$

$$24) \quad m(x) = \operatorname{sech}(x^2)$$

24) 
$$m(x) = \mathrm{sech}(x^2)$$
 និង  $n(x) = \sin(x) - \frac{x^2}{3}$  ។ គណនា  $n \circ m$  ?

A) 
$$\sin^2(\sec x - 1)$$

$$A \ ) \ \sin^2(\sec x - 1) \qquad B \ ) \ \sin\left( {\rm sech}(x^2) \right) - \frac{{\rm sech}^2(x^2)}{3} \qquad C \ ) \ 2 \frac{1}{(x-1)^2} \qquad D \ ) \ \frac{(x-1)^2}{2}$$

C) 
$$2\frac{1}{(x-1)^2}$$

$$D) \frac{(x-1)^2}{2}$$

#### ចូរគណនាតម្លៃអនុគមន៍នីមួយៗខាងក្រោម IX.

**25)** 
$$\sin(\cos^{-1}x) = ?$$

A) 
$$\sqrt{x^2-1}$$

B) 
$$x^2 - 3$$

A) 
$$\sqrt{x^2-1}$$
 B)  $x^2-1$  C)  $2(x-1)^2$  D)  $\sqrt{1-x^2}$ 

D) 
$$\sqrt{1-x^2}$$

**26)** 
$$\cos(\sin^{-1}x) = ?$$

A) 
$$\sqrt{x^2 - 1}$$
 B)  $\sqrt{1 - x^2}$ 

B) 
$$\sqrt{1-x^2}$$

C) 
$$2(x-1)^2$$
 D)  $x^2-1$ 

D) 
$$x^2 - 1$$

**27)** 
$$\tan(2\tan^{-1}x) = ?$$

A) 
$$\frac{2x}{1-x^2}$$

B) 
$$2(x-1)$$

A) 
$$\frac{2x}{1-x^2}$$
 B)  $2(x-1)^2$  C)  $\frac{2}{1-x^2}$  D)  $x^2-1$ 

D) 
$$x^2 - 1$$

**28)** 
$$\tan^{-1}\left(\frac{1}{2}\right) + \tan^{-1}\left(\frac{1}{2}\right) = ?$$

A) 
$$\frac{\pi}{4}$$

B) 
$$\pi^2$$
 C)  $\frac{2}{1-x^2}$  D)  $x^2-1$ 

D) 
$$x^2 - 1$$

#### Use the given conditions to write an equation for the line in the indicated form X.

Passing through (4,3) and parallel to the line whose equation is y = 2x - 6; pointslope form is

A) 
$$y - 3 = x - 4$$

A) 
$$y-3=x-4$$
 B)  $y-4=2(x-3)$  C)  $y=2x$  D)  $y-3=2(x-4)$ 

D) 
$$y - 3 = 2(x - 4)$$

Passing through (5,3) and perpendicular to the line whose equation is y = 2x + 7; point-slope form is

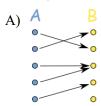
A) 
$$y = -2x - 11$$

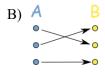
B) 
$$y-5=\frac{1}{2}(x-3)$$

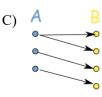
A) 
$$y = -2x - 11$$
 B)  $y - 5 = \frac{1}{2}(x - 3)$  C)  $y - 3 = \frac{1}{2}(x - 5)$ 

$$y - 3 = \frac{1}{2}(x + 5)$$

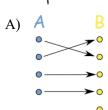
31) ក្នុងជ្យាក្រាមខាងក្រោម តើមួយណាជាអនុគមន៍ប្រកាន់?

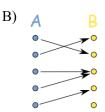


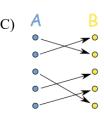




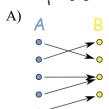
32) ក្នុងដ្យាក្រាមខាងក្រោម តើមួយណាជាអនុគមន៍ពេញ?

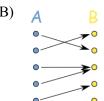


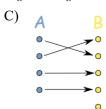




33) ក្នុងដ្យាក្រាមខាងក្រោម តើមួយណាជាអនុគមន៍មួយទល់មួយ?







- ចូរបញ្ជាក់លក្ខណៈរបស់អនុគមន៍ខាងក្រោម៖ XI.
  - 34)  $f(x) = x^2 3$
  - A) ពេញ
- B) ប្រកាន់
- C) មួយទល់មួយ
- D) មិនដឹង

35)  $f(x) = \frac{x^3 + 7}{x^2 - 2}$ 

- A) ប្រកាន់
- B) ពេញ
- C) មួយទល់មួយ
- D) មិនដឹង

- 36)  $f(x) = \frac{1}{x^2 + 2}$
- A) មិនដឹង
- B) ប្រកាន់
- C) មួយទល់មួយ
- D) ពេញ

- 37)  $f(x) = \frac{x^3 2}{x^2}$
- A) មួយទល់មួយ
- в) ប្រកាន់
- C) ពេញ
- D) មិនដឹង

- 38)  $f(x) = \sin(x), -\pi < x < \pi$
- A) មួយទល់មួយ B) ពេញ
- C) ប្រកាន់
- D) មិនដឹង

- ចូរបញ្ជាក់ចន្លោះម៉ូណូតូនរបស់អនុគមន៍ខាងក្រោម៖ XII.
  - 39)  $f(x) = \frac{1}{x-1}$
  - A) ចុះលើ  $\mathbb{R} \setminus \{1\}$  B) កើនលើ  $\mathbb{R}$
- $\mathrm{C}$ ) បើរលើ  $\mathbb{R} \setminus \{1\}$   $\mathrm{D}$ ) មិនដឹង

- 40)  $f(x) = \sin(x), -\pi < x < \pi$
- A) ប៊ុះលើ  $\mathbb R$  B) កើនលើ  $-\pi < \mathrm{x} < \pi$
- C) បើវលើ  $-\pi < \mathrm{x} < \pi$  D) មិនដឹង

- **41)**  $g(x) = -x^3 2x^2 + x$ , -2 < x < 0
- A)  $\overline{\mathbf{0}}$ :  $\mathbf{N}$   $\mathbf{0}$   $\mathbf{0}$
- $\mathrm{C}$ ) បើរលើ  $\mathbb{R}$   $\mathrm{D}$ ) មិនដឹង

- 42)  $f(x) = -3, 0 < x < +\infty$
- A) ប៊ុះលើ  $-\infty < x < 0$  B) កើនលើ  $\mathbb R$  C) បើរលើ  $(0,+\infty)$  D) មិនដឹង

- តើមួយណាជាចម្រាសរបស់អនុគមន៍ខាងក្រោម៖ XIII.
  - $43) \quad f(x) = \sinh(x)$
  - A)  $f^{-1}(x) = \ln(x + \sqrt{x^2 + 1})$  B)  $f^{-1}(x) = \ln(x + \sqrt{x^2 1})$  C)  $f^{-1}(x) = \ln(\frac{1 + x}{1 x})$

- 44)  $h(x) = \tanh(x)$
- A)  $h^{-1}(x) = \frac{1}{2} \ln \left( \frac{1+x}{1-x} \right), -1 < x < 1$  B)  $h^{-1}(x) = \frac{1}{2} \ln \left( x^2 1 \right)$  C)  $h^{-1}(x) = \ln \left( \frac{1+x}{1-x} \right)$

- តើមួយណាជាកន្សោមតម្លៃនៃអនុគមន៍ខាងក្រោម៖ XIV.
  - 45)  $f(x) = 2^x$
  - A)  $\frac{f(x+3)}{f(x-1)} = f(4)$  B)  $\frac{f(x+3)}{f(x-1)} = f(4)$  C)  $\frac{f(x+3)}{f(x-1)} = f(4)$  D) Assign

- 46)  $f(x) = \frac{1}{x}$

- A)  $-f(3) = f\left(\frac{3}{-2}\right)$  B)  $f(1) f(3) = f\left(\frac{3}{2}\right)$  C)  $f(-2) = f\left(\frac{ab}{-b-a}\right)$  D)  $\mathfrak{A}$

- បមើយ
- 47)  $g(x) = \frac{x-1}{x+1}$
- A)  $f\left(-\frac{1}{x}\right) = -\frac{1}{x}$  B)  $f(x) f(3) = f\left(\frac{x}{3}\right)$  C) f(x-2) = -x D) គ្មានបម្លើយ

តើអនុគមន៍ខាងក្រោម ជាប់ត្រង់តម្លៃណា ? XV.

48) 
$$f(x) = \begin{cases} \frac{\sin x}{x}, & x \neq 0 \\ 0, & x = 0 \end{cases}$$

A) 
$$x = \frac{\pi}{4}$$
 B)  $x = 0$  C)  $x = \frac{1}{2}$  D)  $x = -1$ 

$$B) x = 0$$

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

D) 
$$x = -1$$

49) 
$$f(x) = x - |x|$$

A) 
$$x = \frac{1}{2}$$
 B)  $x = 0$ 

$$B) x = 0$$

$$C) x = 1$$

C) 
$$x = 1$$
 D)  $x = -1$ 

50) 
$$f(x) = \begin{cases} \frac{x-6}{x-3}, & x < 0 \\ 2, & x = 0 \\ \sqrt{4+x^2}, & x > 0 \end{cases}$$

A) 
$$x = \frac{1}{2}$$
 B)  $x = -1$  C)  $x = 1$  D)  $x = 0$ 

B) 
$$x = -1$$

$$C) x = 1$$

$$D) x = 0$$

តើអនុគមន៍ខាងក្រោមមិនជាប់ត្រង់តម្លៃ  $\mathbf{x}_0$  ឬទេ ? XVI.

51) 
$$f(x) = \begin{cases} -2x + 4, & x > 1 \\ x + 1, & x < 1 \\ -1, & x = 1 \end{cases}$$

A) ជាប់ត្រង់ 
$$x_0 = 1$$

A) ជាប់ត្រង់ 
$$x_0 = 1$$
 B) មិនជាប់ត្រង់  $x_0 = 1$  C) គ្មានយោបល់

52) 
$$f(x) = \begin{cases} x+1, & x \ge 2\\ 2x-1, & 1 < x < 2\\ x-1, & x \le 1 \end{cases}$$

$${
m A}\,)$$
 មិនជាប់ត្រង់  ${
m x}_0=1$   ${
m B}\,)$  ជាប់ត្រង់  ${
m x}_0=1$ 

$$\mathrm{B})$$
 ជាប់ត្រង់  $\mathrm{x}_0=1$ 

C) គ្មានយោបល់

គណនាលីមីតខាងក្រោម៖ XVII.

53) 
$$\lim_{t \to -1} \frac{t+1}{|t+1|}$$

A) 
$$-1$$

**54)** 
$$\lim_{z \to 4} \frac{\sqrt{z} - 2}{z - 4}$$

A) 
$$\frac{1}{4}$$
 B)  $+\infty$ 

$$B) + \infty$$

55) 
$$\lim_{x \to -3} \frac{\sqrt{2x + 22} - 4}{x + 3}$$

$$B) +\infty$$

B) 
$$+\infty$$
 C)  $\frac{1}{4}$ 

56) 
$$\lim_{x\to 0} \frac{x}{3-\sqrt{x+9}}$$

A) 
$$-6$$

$$C) \frac{1}{4}$$

D) 
$$+\infty$$

XVIII. គេអោយអនុគមន៍  $f(x) = \begin{cases} 7-4x & x < 1 \\ x^2+2 & x \geq 1 \end{cases}$  គណនាលីមីតខាងក្រោម៖

 $57) \quad \lim_{x \to -6} f(x)$ 

A) 
$$-6$$

D) 
$$+\infty$$

$$58) \quad \lim_{x \to 1} f(x)$$

$$A) -6$$

D) 
$$+\infty$$

XIX. តើមួយណាជានិយមន័យនៃដេរីវេរបស់អនុគមន៍ខាងក្រោម៖

**59)** 
$$f(t) = \frac{t}{1+t}$$

$$A) \ g'(t) = \lim_{h \to 0} \frac{1}{h} \left( \frac{t+h}{t+h+1} - \frac{t}{t+1} \right)$$

B) 
$$g'(t) = \lim_{h \to 0} h \left( \frac{t+h}{t+h+1} - \frac{t}{t+1} \right)$$

C) 
$$g'(t) = \frac{1}{(1+t)^2}$$

**60**) 
$$R(z) = \sqrt{5z - 8}$$

A) 
$$R'(z) = \frac{1}{h} \lim_{h \to 0} \sqrt{5(z+h) - 8} - \sqrt{5z - 8}$$

B) 
$$R'(z) = -\frac{5}{2(5z-8)^2}$$

C) 
$$R'(z) = \lim_{h \to 0} \frac{\sqrt{5(z+h)-8} - \sqrt{5z-8}}{h}$$

**61**) 
$$f(x) = 2x^2 + 35$$

$$A) f'(x) = 4x$$

B) 
$$f'(x) = \lim_{h \to 0} \frac{2(x+h)^2 + 35 - (2x^2 + 35)}{h}$$

D) 
$$f'(x) = \frac{1}{h} \lim_{h \to 0} 2(x+h)^2 + 35 - (2x^2 + 35)$$

**62)** 
$$R(z) = \frac{5}{z}$$

$$A) R'(z) = -\frac{5}{z^2}$$

B) 
$$R'(z) = \lim_{h \to 0} \left( \frac{5}{z+h} - \frac{5}{z} \right)$$

C) 
$$R'(z) = \frac{1}{h} \lim_{h \to 0} \left( \frac{5}{z+h} - \frac{5}{z} \right)$$

XX. ចូរកេចម្លើយនៃដេរីវេលំដាប់ n របស់អនុគមន៍ខាងក្រោម៖

**63**) 
$$y = \frac{1}{x}$$

A) 
$$y^{(n)} = \frac{(-1)^n n!}{x^{(n+1)}}$$

B) 
$$y^{(n)} = \frac{(-1)^n n!}{x^{(n)}}$$

$$C) \ y^{(n)} = \frac{n!}{x^{(n+1)}}$$

**64**) 
$$y = xe^{2x}$$

A) 
$$y^{(n)} = 2^n(x+n)e^{2x}$$

B) 
$$y^{(n)} = e^{2x} + 2xe^{2x}$$

C) 
$$y^{(n)} = 2^{n-1}e^{2x}(2x+n)$$

**65**) 
$$f(x) = x^n$$

A) 
$$f^{(n)}(x) = n!x^{n-(n-1)}$$

C) 
$$f^{(n)}(x) = n!x$$

D) 
$$f^{(n)}(x) = n!$$

## XXI. ចូររកចម្លើយនៃដេវីវេលំដាប់ 2 របស់អនុគមន៍ខាងក្រោម៖

**66**) 
$$y = csc(x)$$

A) 
$$y'' = -\csc(x) + 2\csc^3(x)$$

C) 
$$y'' = \sec(x) + 2\csc^3(x)$$

$$D) y'' = -\sec(x)$$

$$67) \quad f(x) = \sinh(x)$$

$$A) \ f''(x) = \sinh(x)$$

C) 
$$f''(x) = \cosh(x)$$

$$D) f''(x) = -\sinh(x)$$

**68**) 
$$g(x) = \frac{1}{1-x}$$

A) 
$$g''(x) = \frac{2}{(1-x)^3}$$

B) 
$$g''(x) = \frac{2}{(1-x)^4}$$

C) 
$$g''(x) = \frac{-2}{(1-x)^3}$$

# XXII. ចូររកចម្លើយនៃដេរីវេលំដាប់ 3 របស់អនុគមន៍ខាងក្រោម៖

69) 
$$y = x^3$$

A) 
$$y''' = 1$$

B) 
$$y''' = 6$$

C) 
$$y''' = -6$$

**70**) 
$$y = \frac{1}{1-x}$$

A) 
$$y''' = \frac{6}{(1-x)^4}$$

B) 
$$y''' = \frac{1}{(1-x)^6}$$

C) 
$$y''' = -6(1-x)^{-4}$$

71) 
$$y = sec(x)$$

$$A) y''' = \sec(x)$$

B) 
$$y''' = \frac{\sin^3(x) + 5\sin(x)}{\cos^4(x)}$$

D) 
$$y''' = \frac{\sin^3(x) + 5\sin(x)}{\cos(x)}$$

### XXIII. ចូររកចម្លើយរបស់អាំងតេក្រាលកំណត់ខាងក្រោម៖

**72)** 
$$I = \int_{2}^{0} x^{2} + 1 dx$$

A) I = 
$$\frac{14}{3}$$

B) I = 
$$\frac{10}{3}$$

C) I = 
$$-\frac{14}{3}$$

D) I = 
$$-\frac{4}{3}$$

73) 
$$I = \int_0^2 10x^2 + 10dx$$

A) I = 
$$\frac{140}{3}$$

B) I = 
$$\frac{10}{3}$$

C) I = 
$$-\frac{140}{3}$$

D) I = 
$$-\frac{4}{3}$$

**74)** 
$$J = \int_0^2 t^2 + 1 dt$$

A) J = 
$$\frac{14}{3}$$

B) J = 
$$\frac{10}{3}$$

C) J = 
$$-\frac{10}{3}$$

D) J = 
$$-\frac{4}{3}$$

75) 
$$\int_{130}^{130} \frac{x^3 - x \sin(x) + \cos(x)}{x^2 + 1} dx$$

A) J = 
$$\frac{\pi}{3}$$

B) J = 
$$\frac{10}{3}$$

C) J = 
$$-\frac{10}{3}$$

D) 
$$J = 0$$

76) 
$$\int_{6}^{-10} f(x) dx = 23$$
 និង  $\int_{-10}^{6} g(x) dx = -9$  គណនា  $J = \int_{-10}^{6} 2f(x) - 10g(x) dx$ 

A) 
$$J = 44$$

B) J = 
$$\frac{10}{3}$$

C) 
$$J = -44$$

D) 
$$J = 0$$

$$\begin{array}{ll} {\bf 77)} & \int_{12}^{-10} f(x) dx = 6, \ \int_{100}^{-10} f(x) dx = -2 \ \ {\bf \tilde{S}} \ {\bf \ddot{h}} \ \int_{100}^{-5} f(x) dx = 4 \ \ {\bf \tilde{F}MS} \ \ \int_{-5}^{12} f(x) dx \end{array}$$

A) 
$$J = 44$$

B) 
$$J = 12$$

C) 
$$J = -12$$

D) 
$$J = 0$$

#### ចូររកដេរីវេរបស់អនុគមន៍ខាងក្រោម៖ XXIV.

78) 
$$g(x) = \int_{-1}^{x} e^{2t} \cos^2(1-5t) dt$$

A) 
$$g'(x) = e^{2x} \cos^2(1 - 5x)$$

B) 
$$g'(x) = e^{2x} \cos^2(1 + 5x)$$

C) 
$$g'(x) = 0$$

D) 
$$g'(x) = -e^{2x} \cos^2(1 - 5x)$$

79) 
$$h(x) = \int_{x^2}^1 \frac{t^4 + 1}{t^2 + 1}$$

A) 
$$h'(x) = -2x \frac{x^8 + 1}{x^4 + 1}$$

B) 
$$h'(x) = -x \frac{x^8 + 1}{x^4 + 1}$$

C) 
$$h'(x) = 2x \frac{x^8 + 1}{x^4 - 1}$$

D) 
$$h'(x) = 0$$

80) 
$$k(x) = \int_{\sqrt{x}}^{3x} t^2 \sin(1+t^2) dt$$

A) 
$$k'(x) = \frac{1}{4}\sqrt{x} + 27\sin(1+9x^2)$$

$$A) \ k^{'}(x) = \frac{1}{4} \sqrt{x} + 27 \sin \left(1 + 9 x^{2}\right) \qquad B) \ k^{'}(x) = -\frac{1}{2} \sin (1 + x) + 27 x^{2} \sin \left(1 + 9 x^{2}\right)$$

C) 
$$k'(x) = -\frac{1}{2}\sqrt{x}\sin(1+x)$$

C) 
$$k'(x) = -\frac{1}{2}\sqrt{x}\sin(1+x)$$
 D)  $k'(x) = -\frac{1}{2}\sqrt{x}\sin(1+x) + 27x^2\sin(1+9x^2)$ 

81) 
$$f(x) = \int_4^x 9\cos^2(t^2 - 6t + 1)dt$$

A) 
$$f'(x) = 9\cos^2(x^2 - 6x + 1)$$

B) 
$$f'(x) = -9\sin^2(x^2 - 6x + 1)$$

C) 
$$f'(x) = -9\sin^2(x^2 - 6x)$$