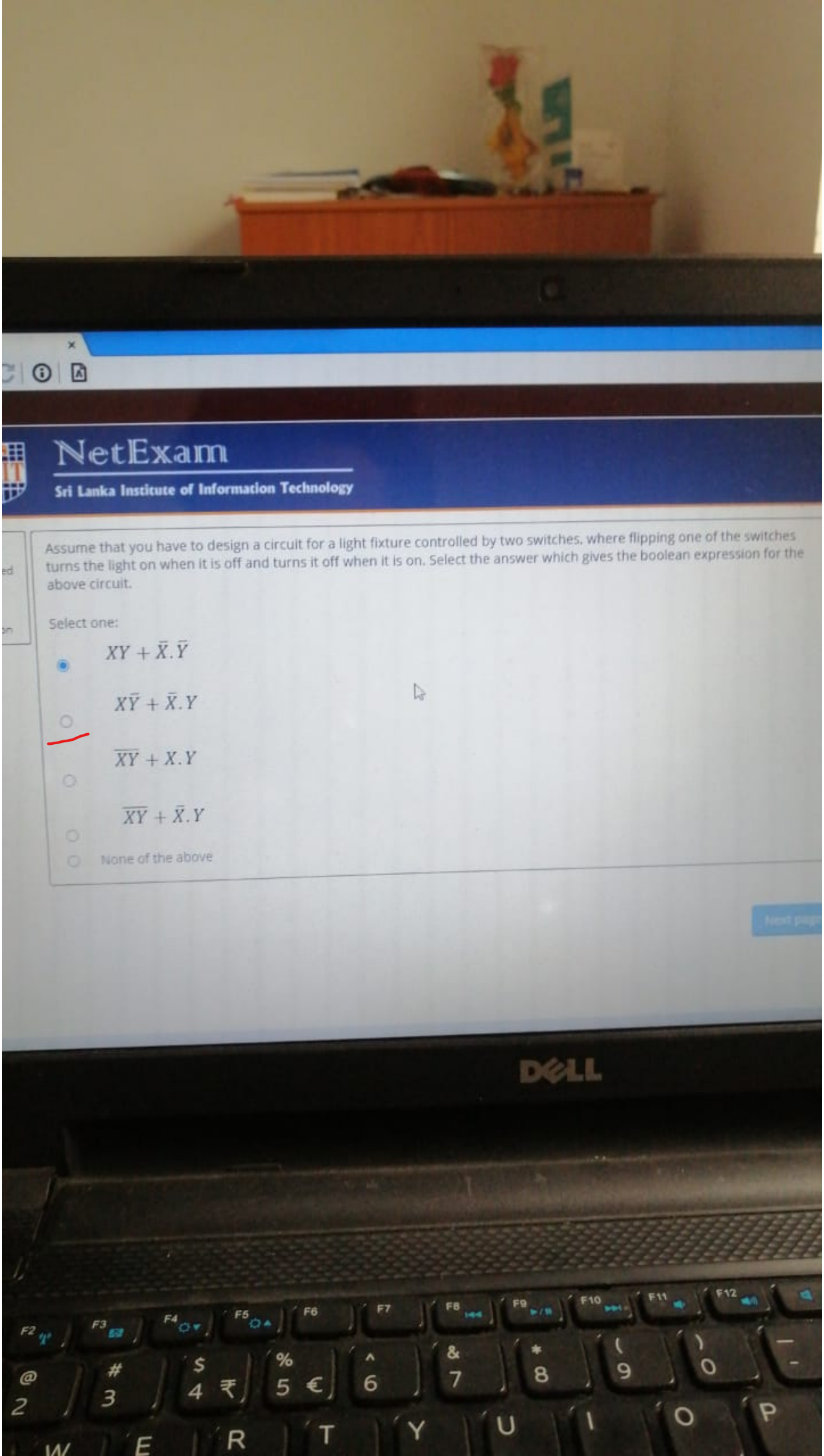

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Assume that you have to design a circuit for a light fixture controlled by two switches, where flipping one of the switches turns the light on when it is off and turns it off when it is on. Select the answer which gives the boolean expression for the above circuit.

Select one:

- $XY + \bar{X}.\bar{Y}$
- $X\bar{Y} + \bar{X}.Y$
- $\overline{XY} + X.Y$
- $\overline{XY} + \bar{X}.Y$
- None of the above

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Differentiate the following function with respect to x

$$x^{-2} - 3x + 3$$

Select one:

- $-\frac{2}{x^3} - 3$
- $-\frac{1}{x^3} - 3$
- $-\frac{1}{x^3} - 4$
- $\frac{1}{5x^2}$
- None of the above.

$-2x^{-3} - 3$

$\frac{-2}{x^3} - 3$ //

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Find the value of $\int_0^4 g(s)\,ds$, given that $\int_4^0 g(s)\,ds = \frac{21}{8}$.

Select one:

- -21/4
- 0
- 9
- 21/8
- None of the above.

$-\frac{21}{8}$

Not yet answered

Marked out of 1.00

Flag question

$$(x^3-1)^2-x^6+\sqrt{x}-1$$

Select one:

- $-\dfrac{12x^{\frac{11}{2}}+12x^{\frac{5}{2}}-1}{2\sqrt{x}}$
- $-\dfrac{12x^{\frac{5}{2}}-1}{2\sqrt{x}}$
- $-\dfrac{12x^{\frac{7}{2}}+1}{2x^{\frac{3}{2}}}$
- $-7x^6+6x^2\left(x^3-1\right)-\dfrac{1}{2x^{\frac{3}{2}}}$
- None of the above

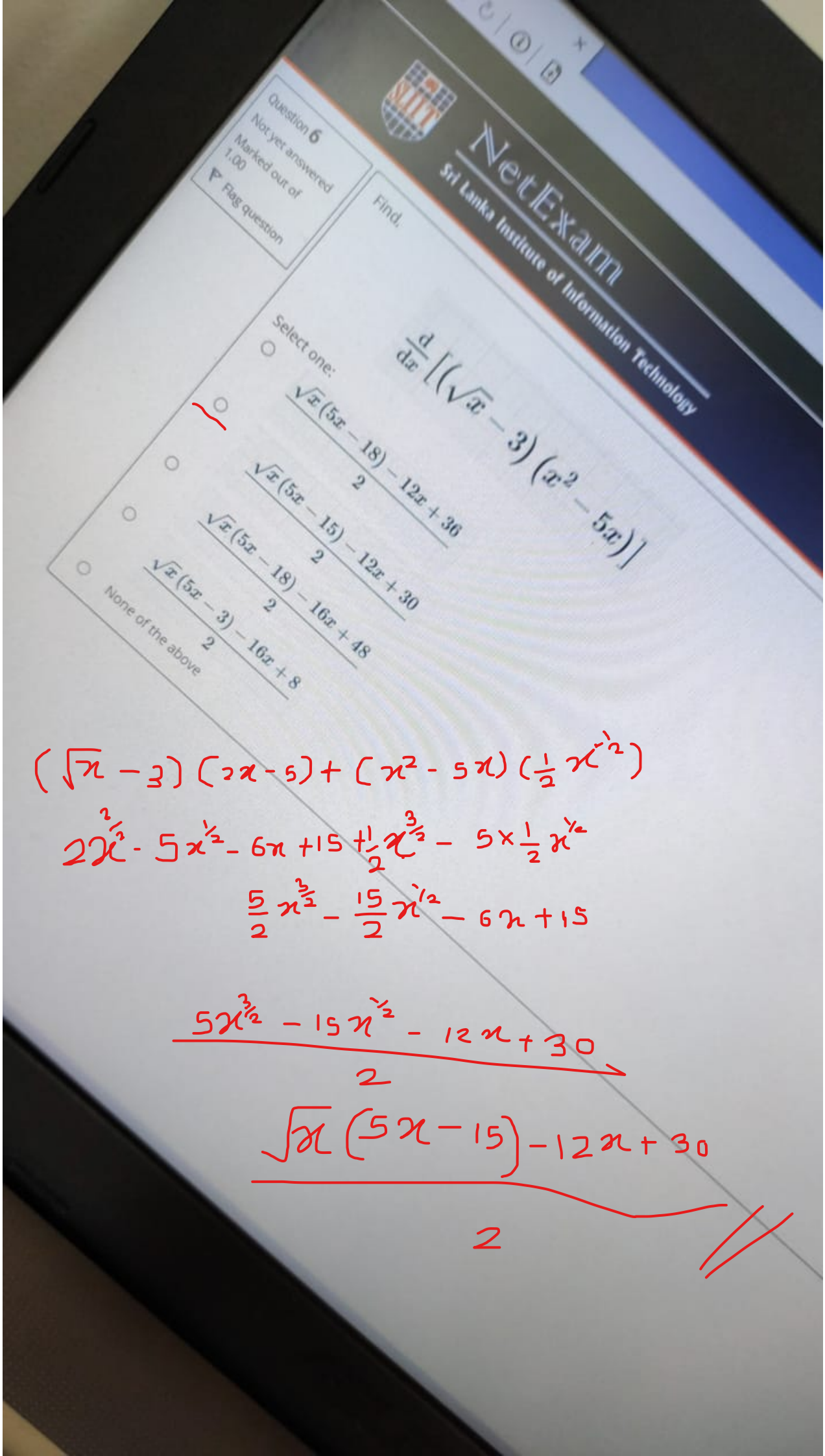
$2(x^3-1)(3x^2)-6x^5+\frac{1}{2}x^{-1/2}$

$2x^3-2(3x^2)$? ?

$6x^5-6x^2-6x^5+\frac{1}{2}x^{1/2}$

$-6x^2+\frac{1}{2\sqrt{x}}$

$\frac{-12x^{\frac{5}{2}}+1}{2\sqrt{x}}$



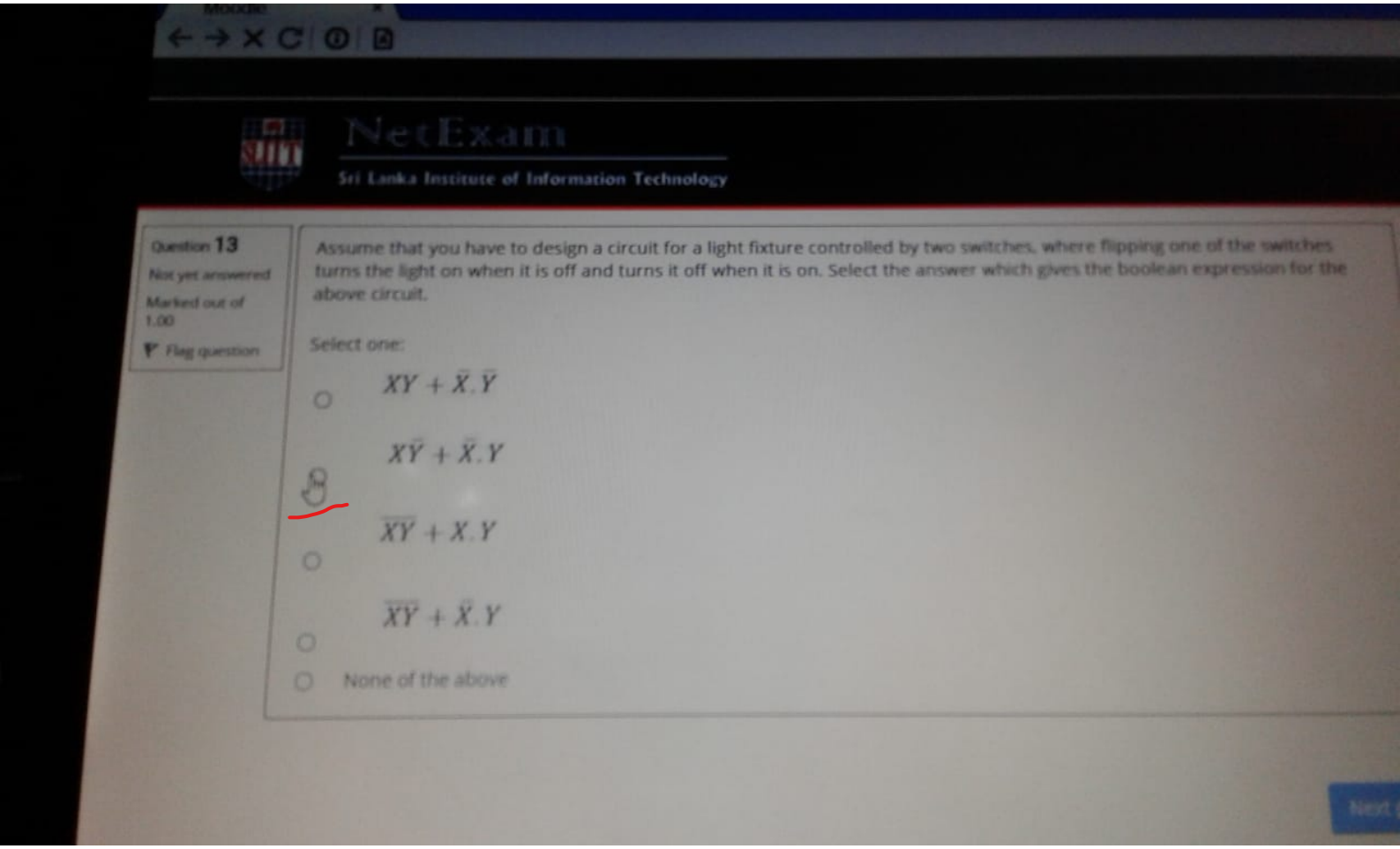
$(\sqrt{x}-3)(2x-5)+(x^2-5x)(\frac{1}{2}x^{-1/2})$

$2x^{3/2}-5x^{1/2}-6x+15+\frac{1}{2}x^{3/2}-5\times\frac{1}{2}x^{1/2}$

$\frac{5}{2}x^{3/2}-\frac{15}{2}x^{1/2}-6x+15$

$\frac{5x^{3/2}-15x^{1/2}-12x+30}{2}$

$\frac{\sqrt{x}(5x-15)-12x+30}{2}$ //



X	Y	F
0	0	0
0	1	1
1	0	1
1	1	0

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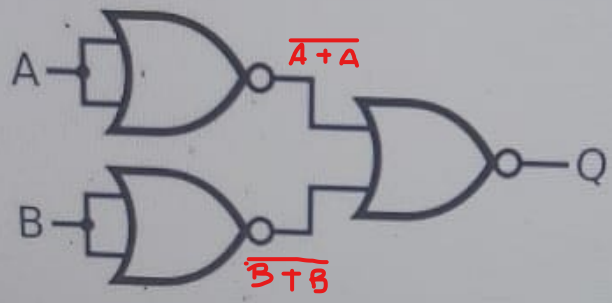
Following circuit is equivalent to:



$(\overline{A+A})+(\overline{B+B})$

$(\overline{A+A})(\overline{B+B})$

$\overline{A}.\overline{A}.(\overline{B}.\overline{B})$

$\overline{A}+\overline{A}(\overline{B}+\overline{B})$

$A+A(B+B)$

$A.B$

Select one:

- NOR Gate
- OR Gate
- AND Gate
- NOT Gate
- None of the above

Mary deposits $550 in a savings account at 3% simple annual interest. The value of this account, *v* is given by the function $v = 550 + 16.5t$, in which *t* s the number of years the money is in the bank. What is the range of this function?

Select one:

- $0 \leq v \leq 550$
- $v \geq 550$
- $v \leq 550$
- $0 \leq v \leq 16.5$
- None of the above

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Question 6

Find,

$$\frac{\mathrm{d}}{\mathrm{d}x}\left[\left(\sqrt{x}-3\right)\left(x^2-5x\right)\right]$$

Select one:

- $\frac{\sqrt{x}\,(5x-18)-12x+36}{2}$
- $\frac{\sqrt{x}\,(5x-15)-12x+30}{2}$
- $\frac{\sqrt{x}\,(5x-18)-16x+48}{2}$
- $\frac{\sqrt{x}\,(5x-3)-16x+8}{2}$
- None of the above

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The inverse of function $f(x) = x^3 + 2$ is _____.

Select one:

- $f^{-1}(x) = (x-2)^{1/3}$
- $f^{-1}(x) = (x-2)^{1/2}$
- $f^{-1}(x) = x^{1/3}$
- $f^{-1}(x) = x - 2$
- None of the above

$y = x^3 + 2$

$x = \sqrt[3]{y-2}$

$= (x-2)^{1/3}$

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$f(x) = 2(24 - 5x)^{1/2}$ is a function that is defined for $x \leq 24/5$. Find the inverse function.

Select one:

- $f^{-1}(x) = 24/5 - x^2/20$
- $f^{-1}(x) = 5/2 + x/4$
- $f^{-1}(x) = 24/5 + x^2/20$
- $f^{-1}(x) = 12 - x^2/20$
- None of the above

$y = 2(24 - 5x)^{1/2}$

$\frac{y}{2} = \sqrt{24 - 5x}$

$\left(\frac{y}{2}\right)^2 = \left(\sqrt{24 - 5x}\right)^2$

$\frac{y^2}{4} = 24 - 5x$

$\frac{y^2}{4} - 24 = -5x$

$\frac{y^2}{20} - \frac{24}{5} = -x$

$-\left(\frac{y^2}{20} - \frac{24}{5}\right) = -(-x)$

$-\frac{y^2}{20} + \frac{24}{5} = x$

$f^{-1}(x) = 24/5 - x^2/20$

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Flag question

Convert the number 167_{10} to a base 11 positional number system.

Select one:

- 20A
- 812
- 113
- 11B
- None of the above.

11 | 167

11 | 15 - 2

1 - 4

142 11

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on 21

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question

Convert the number 4221_5 to equivalent decimal numbers.

Select one:

- 561
- 692
- 298
- 332
- None of the above.

4221

$5^3\ 5^2\ 5^1\ 5^0$

$500 + 50 + 10 + 1$

561

Question 7

Not yet answered

Marked out of 1.00

Flag question

Find,

$$\frac{d}{dx}\left[\frac{x^2-9}{2x+1}\right]$$

$$\frac{(2x+1)(2x)-(x^2-9)(2)}{(2x+1)^2}$$

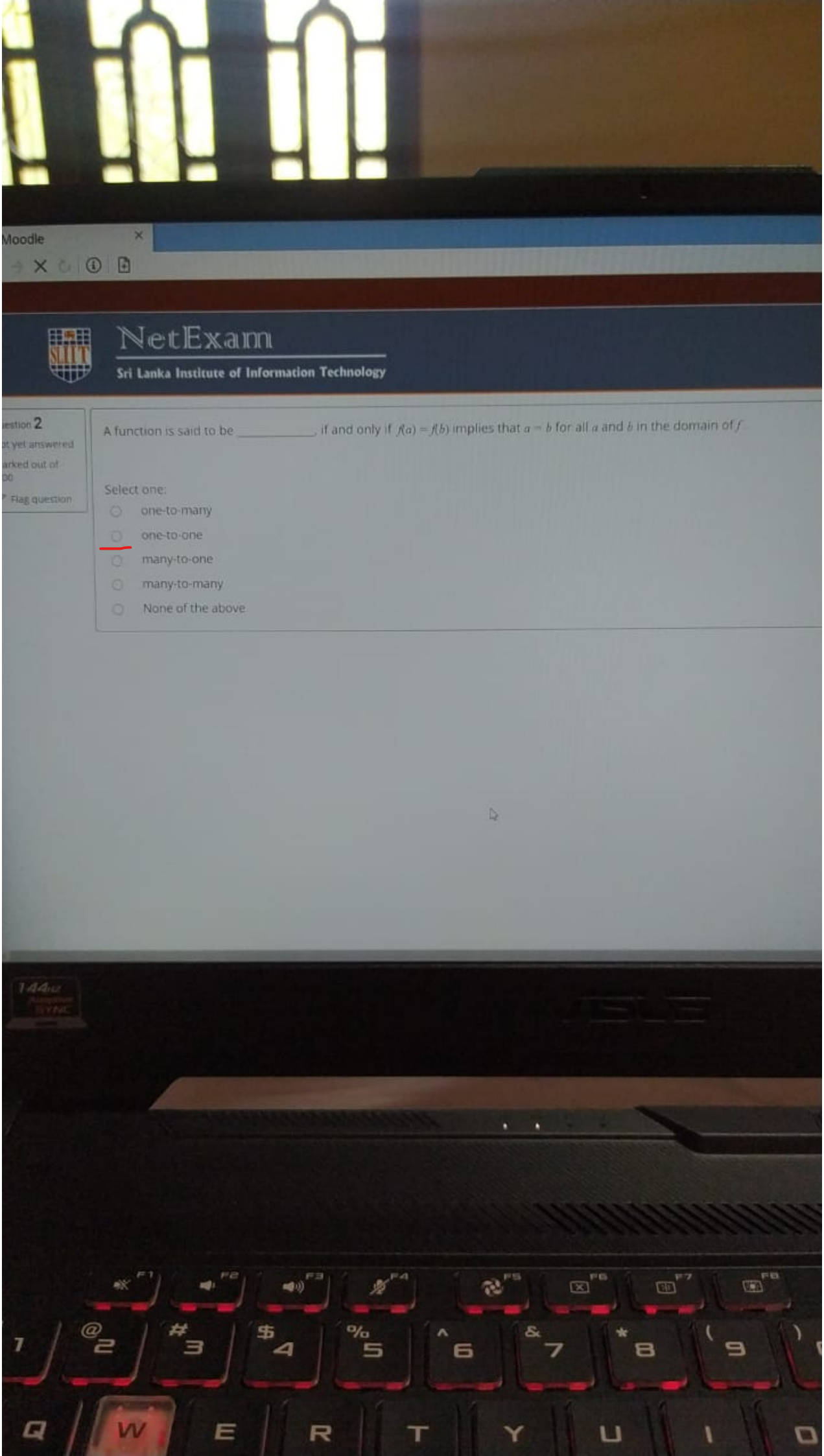
Select one:

- $\frac{2\left(x^2+x+9\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x+7\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x+6\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x+11\right)}{(2x+1)^2}$
- None of the above

$$\frac{4x^2+2x-2x^2-18}{(2x+1)^2}$$

$$\frac{2x^2+2x+18}{(2x+1)^2}$$

$$\frac{2(x^2+x+9)}{(2x+1)^2}$$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A function is said to be _____, if and only if $f(a) = f(b)$ implies that $a = b$ for all a and b in the domain of f.
Select one:
one-to-many
one-to-one
many-to-one
many-to-many
None of the above

Answer 1 Idempotent Law

Answer 2 Choose...

Answer 3 Universal Bound Law

Answer 4 Identity Law

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Flag question

Select the suitable answer for each blank.

proof:

$AB + A$

$AB + A1$ [_ _ 1 _ _]

$A(B + 1)$ [_ _ 2 _ _]

$A(1)$ [_ _ 3 _ _]

A [_ _ 4 _ _]

Answer 1 Choose... Identity

Answer 2 Choose... distributive

Answer 3 Choose... Null

Answer 4 Choose... Identity

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Question 4

Not yet answered

Marked out of 1.00

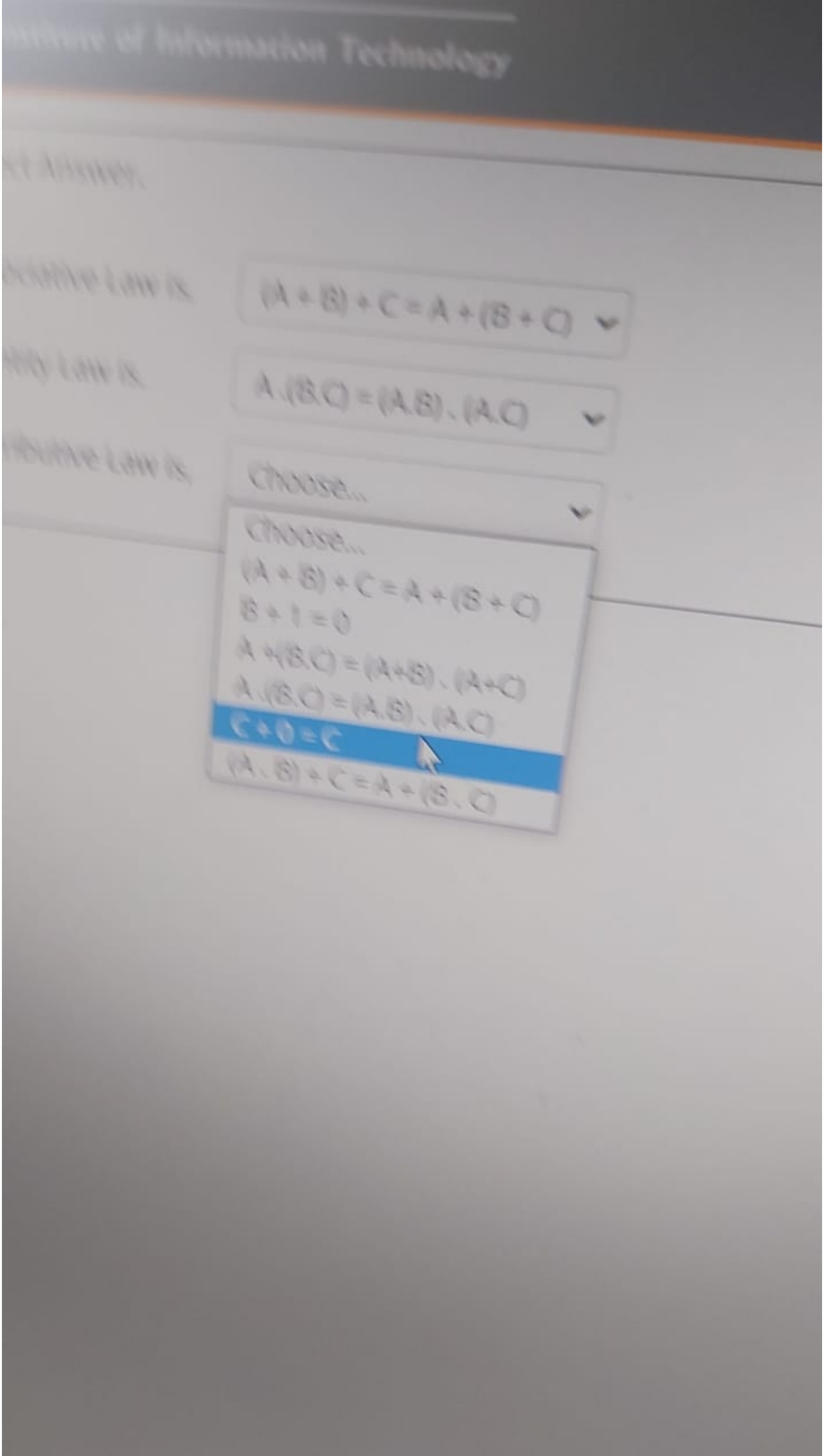
Flag question

Find the value of the following definite integral.

$$\int_0^2 12x(x+1)(2-x)\,dx$$

Select one:

- 64
- 32
- 30
- 28
- None of the above


of Information Technology
Answer.
ociative Law is: (A + B) + C = A + (B + C)
ity Law is: A.(B.C) = (A.B) . (A.C)
ntative Law is: Choose...
Choose...
(A + B) + C = A + (B + C)
B + 1 = 0
A + (B.C) = (A+B) . (A+C)
A.(B.C) = (A.B) . (A.C)
C + 0 = C
(A . B) + C = A + (B . C)

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Differentiate the following function with respect to t.

$$5t^3 + \frac{1}{t^{\frac{3}{2}}} - 3$$

$15t^2 - \frac{5}{2}t^{\frac{1}{2}}$

Select one:

- $15t^2 - \frac{5}{2t^{\frac{7}{2}}}$
- $15t^2 + \frac{5t^{\frac{1}{2}}}{2}$
- $15t^2 - \frac{5}{2t^{\frac{3}{2}}} - 3$
- $15t^2 - \frac{5}{2t^{\frac{1}{2}}}$
- None of the above

$15t^2 - \frac{5}{2t^{\frac{1}{2}}}$

Question **6**

Not yet answered

Marked out of 1.00

Flag question

Find,

$$\frac{\mathrm{d}}{\mathrm{d}x}\left[\left(\sqrt{x}-3\right)\left(x^2-5x\right)\right]$$

Select one:

- $\frac{\sqrt{x}\,(5x-18)-12x+36}{2}$
- $\frac{\sqrt{x}\,(5x-15)-12x+30}{2}$
- $\frac{\sqrt{x}\,(5x-18)-16x+48}{2}$
- $\frac{\sqrt{x}\,(5x-3)-16x+8}{2}$
- None of the above

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Question 7

Not yet answered

Marked out of 1.00

Flag question

Differentiate following function with respect to x

$$\frac{x^2-3}{2x+1}$$

Select one:

- $\frac{2\left(x^2+x+4\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x+3\right)}{(2x+1)^2}$
- $-\frac{2\left(x^2+x+1\right)}{(2x+1)^2}$
- $-\frac{2\left(x^2+x+6\right)}{(2x+1)^2}$
- None of the above

$$\frac{(2x+1)(2x)-(x^2-3)(2)}{(2x+1)^2}$$

$$\frac{4x^2+2x-2x^2-6}{(2x+1)^2}$$

$$\frac{2x^2+2x-6}{(2x+1)^2}$$

$$\frac{2(x^2+x-3)}{(2x+1)^2}$$

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Find the value of the following defi

$$\int_{-1}^{1} \frac{x^2 - \sqrt{25x^2}}{x} dx$$

$$\frac{x^{2+1} - 5x}{x}$$

$$x - 5$$

$$\frac{x^2}{2} - 5x$$

$$\left(\frac{1^2}{2} - 5\times 1\right) - \left(\frac{-1^2}{2} - 5\times -1\right)$$

$$\frac{1}{2} - 5 - \left(\frac{1}{2} + 5\right)$$

$$\frac{1-10}{2} - \left(\frac{1+10}{2}\right)$$

$$\frac{-9}{2} - \frac{11}{2}$$

$$\frac{-20}{2}$$

$$-10$$

Select one:

- 10
- -10
- 0
- -1
- None of the above

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Differentiate, with respect to x,

$f(x) = (2x-1)^4 + (x^2-2)^2$

Select one:

- $68x^3 - 96x^2 + 36x - 8$
- $68x^3 - 288x^2 + 424x - 216$
- $68x^3 - 192x^2 + 184x - 64$
- $68x^3 - 96x^2 + 40x - 8$
- None of the above

$4(2x-1)^3(2) + 2(x^2-2)(2x)$

$8(2x-1)^3 + 4x(x^2-2)$

$8(8x^3 - 12x^2 + 6x - 1) + 4x^3 - 8x$

$64x^3 - 96x^2 + 48x - 8 + 4x^3 - 8x$

$68x^3 - 96x^2 + 40x - 8$

$1 - 3 - 3 - 1$

$1(a^3 b^0) - 3(a^2 b^1) + 3(a^1 b^2) - 1(a^0 b^3)$

$1((2x)^3 \cdot 1^0) - 3((2x)^2 \cdot 1^1) + 3((2x)^1 \cdot 1^2) - 1((2x)^0 \cdot 1^3)$

$1(8x^3 \cdot 1) - 3(4x^2 \cdot 1) + 3(2x \cdot 1) - 1(1 \cdot 1)$

$(8x^3 - 12x^2 + 6x - 1)$

erentiate following function with respect to x

$$\frac{x^2-3}{2x+1}$$

elect one:

- $\frac{2\left(x^2+x+4\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x+3\right)}{(2x+1)^2}$
- $-\frac{2\left(x^2+x+1\right)}{(2x+1)^2}$
- $-\frac{2\left(x^2+x+6\right)}{(2x+1)^2}$
- None of the above

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$f(x) = 2(24 - 5x)^{1/2}$ is a function that is defined for $x \leq 24/5$. Find the inverse function.

Select one:

- $f^{-1}(x) = 24/5 - x^2/20$
- $f^{-1}(x) = 5/2 + x/4$
- $f^{-1}(x) = 24/5 + x^2/20$
- $f^{-1}(x) = 12 - x^2/20$
- None of the above

Next page

Mary deposits $ 450 in a savings account at 2.5% simple annual interest. The value of this account, v, is given by the function $v = 450 + 12.5t$, , in which t is the number of years the money is in the bank. What is the range of this function?

Select one:

- $0 \leq v \leq 450$
- $v \leq 450$
- $v \geq 450$
- $0 \leq v \leq 12.5$
- None of the above

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Find,

$$\int (x^3 - 5x + 8)\,dx$$

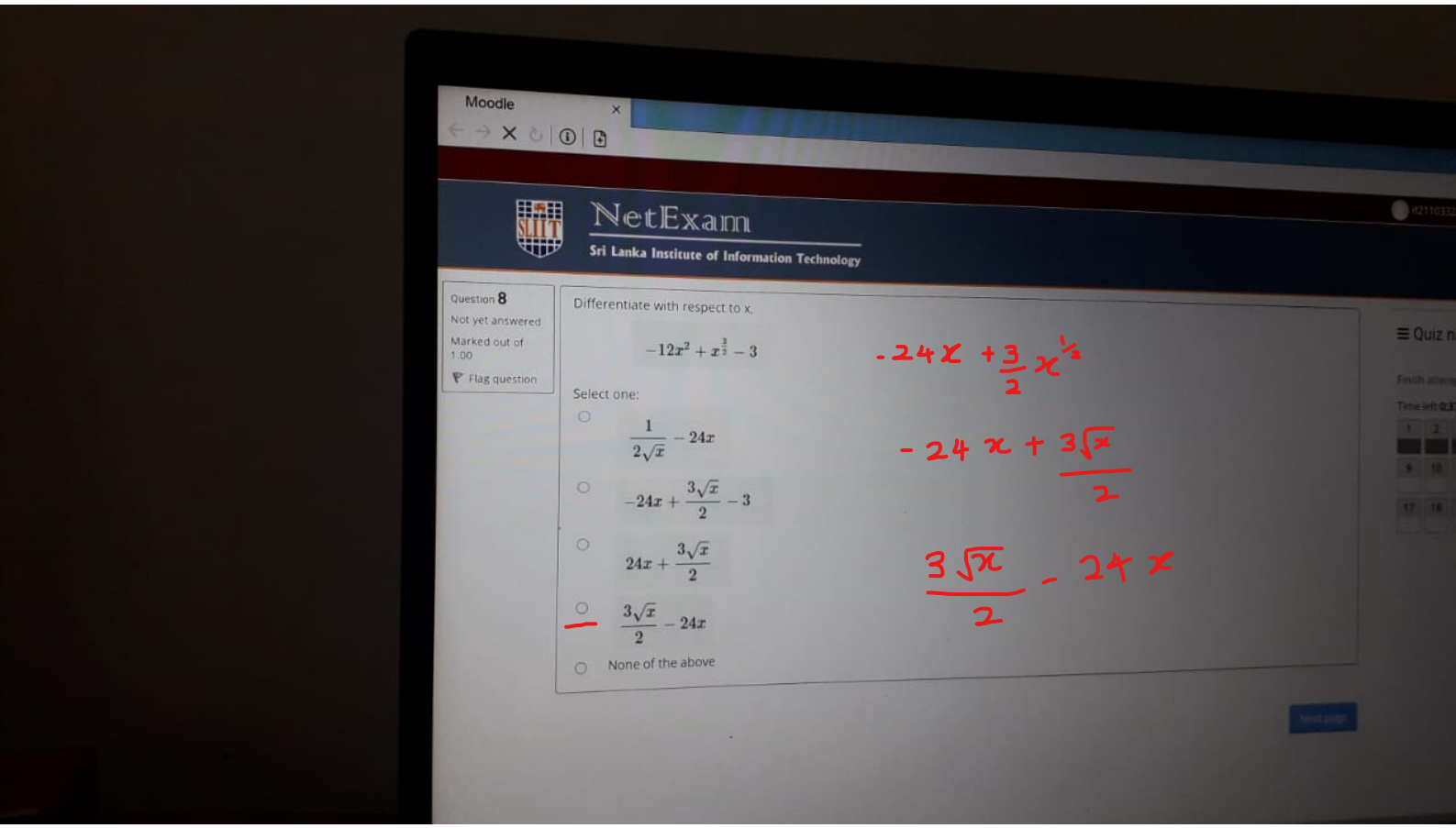
Select one:

- $\frac{x\,(x^3 - 10x + 20)}{4} + C$
- $\frac{x\,(x^3 - 10x + 24)}{4} + C$
- $\frac{x\,(x^3 - 10x + 32)}{4} + C$
- $\frac{x\,(x^3 - 10x - 12)}{4} + C$
- None of the above

$\frac{x^4}{4} - \frac{5x^2}{2} + 8x$

$\frac{x^4 - 10x^2 + 32x}{4}$

$\frac{x(x^3 - 10x + 32)}{4}$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Question 8
Not yet answered
Marked out of 1.00
Flag question
Differentiate with respect to x.
$-12x^2 + x^{\frac{3}{2}} - 3$
Select one:
$\frac{1}{2\sqrt{x}} - 24x$
$-24x + \frac{3\sqrt{x}}{2} - 3$
$24x + \frac{3\sqrt{x}}{2}$
$\frac{3\sqrt{x}}{2} - 24x$
None of the above
$-24x + \frac{3}{2}x^{\frac{1}{2}}$
$-24x + \frac{3\sqrt{x}}{2}$
$\frac{3\sqrt{x}}{2} - 24x$

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Differentiate the following function with respect to x,

$$\left(\sqrt{x}-3\right)\left(x^2-3x\right)$$

Select one:

- $\sqrt{x}\,(5x-9)-6x+9$
- $\dfrac{\sqrt{x}\,(5x-9)-16x+24}{2}$
- $\dfrac{\sqrt{x}\,(5x-6)-16x+16}{2}$
- $\dfrac{\sqrt{x}\,(5x-9)-12x+18}{2}$
- None of the above

$(x^{1/2}-3)(x^2-3x)$

$(x^{1/2}-3)(2x-3)+$

$(x^2-3x)(\frac{1}{2}x^{-1/2})$

$2x^{3/2}-3x^{1/2}-6x+9+\frac{1}{2}x^{3/2}-$

$-\frac{3}{2}x^{1/2}$

$\frac{5}{2}x^{3/2}-\frac{9}{2}x^{1/2}-6x+9$

$\frac{5x^{3/2}-9x^{1/2}-12x+18}{2}$

$\frac{\sqrt{x}\,(5x-9)-12x+18}{2}$

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g question

Find the value of $\int_0^3 h(t)\,dt$. given that $\int_3^0 h(t)\,dt = 6$.

Select one:

- -6
- 0
- 9
- 21/8
- None of the above.

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Not yet answered

Flag question

$$\int x^3 - 2x + 5 \, dx$$

Select one:

- $\frac{x\left(x^3 - 4x + 20\right)}{4} + C$
- $\frac{x^4}{4} + x^2 + 5x + C$
- $\frac{x\left(x^3 - 4x + 12\right)}{4} + C$
- $\frac{x\left(x^3 - 4x - 8\right)}{4} + C$
- None of the above

$\frac{x^4}{4} - \frac{2x^2}{2} + 5x$

$\frac{x^4 - 4x^2 + 20x}{4}$

$\frac{x(x^3 - 4x + 20)}{4}$

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Mary deposits $ 450 in a savings account at 2.5% simple annual interest. The value of this account, v, is given by the function $v = 450 + 12.5t$, in which t is the number of years the money is in the bank. What is the range of this function?

Select one:

- $0 \leq v \leq 450$
- $v \leq 450$
- $v \geq 450$
- $0 \leq v \leq 12.5$
- None of the above

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Question 12

Not yet answered

Marked out of 4.00

Flag question

Select the suitable answer for each blank.

Q = (A + B).(A + C)

A.A + A.C + A.B + B.C – Distributive law

A + A.C + A.B + B.C – (1)

A(1 + C) + A.B + B.C – Distributive law

A.1 + A.B + B.C – (2)

A(1 + B) + B.C – Distributive law

A.1 + B.C – (3)

Q = A + (B.C) – (4)

Answer 1 Choose... Idempotent

Answer 2 Choose... Null

Answer 3 Choose... Null

Answer 4 Choose... Identity

Find the value of the following definite

$$\int_1^7 x^2 \, dx$$

Select one:

- 116
- 120
- 115
- 114
- None of the above

$$\frac{x^3}{3}$$

$$\left(\frac{7^3}{3}\right) - \left(\frac{1^3}{3}\right)$$

$$\frac{343}{3} - \frac{1}{3}$$

$$\frac{342}{3}$$

114 //

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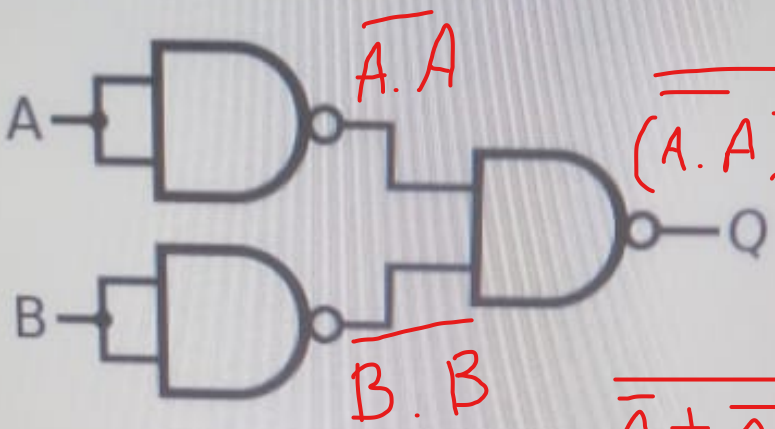
Following circuit is equivalent to,



Select one:

- OR Gate
- NOR Gate
- NAND Gate
- NOT Gate
- None of the above

$\overline{A.A}$

$\overline{(\overline{A.A}).(\overline{B.B})}$

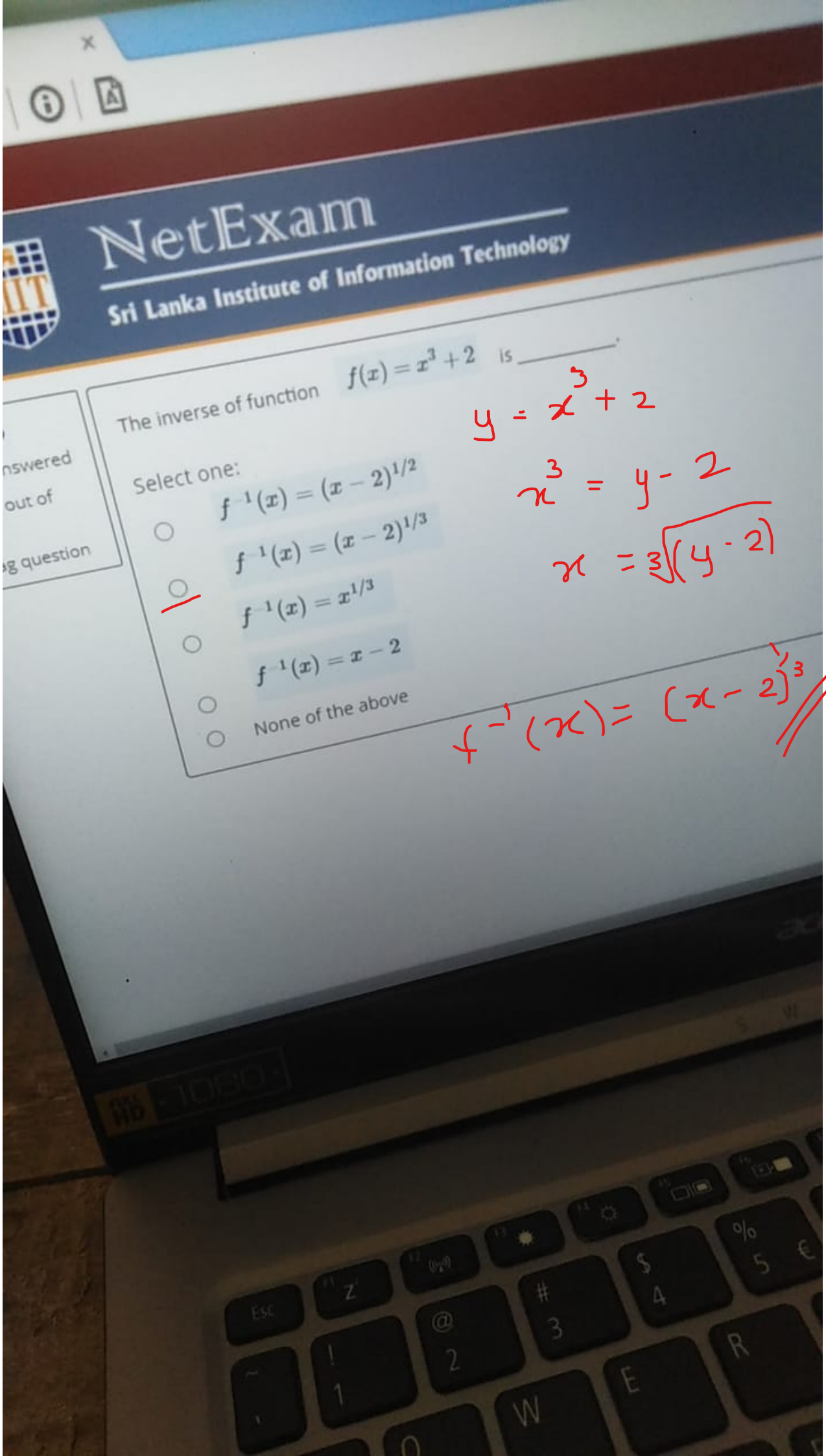
$\overline{B.B}$

$\overline{\overline{A}+\overline{A}}+\overline{(\overline{B}+\overline{B})}$

$\overline{\overline{A}}.\overline{A}+\overline{\overline{B}}.\overline{B}$

$A.A+B.B$

$A+B$ //


NetExam
Sri Lanka Institute of Information Technology
The inverse of function $f(x) = x^3 + 2$ is _____.
Select one:
$f^{-1}(x) = (x-2)^{1/2}$
$f^{-1}(x) = (x-2)^{1/3}$
$f^{-1}(x) = x^{1/3}$
$f^{-1}(x) = x - 2$
None of the above
$y = x^3 + 2$
$x^3 = y - 2$
$x = \sqrt[3]{(y-2)}$
$f^{-1}(x) = (x-2)^{\frac{1}{3}}$

Find the dual of the following expression.

$(a + 0 + 1).(b .c) = b.c.1$

Select one:

- $(a .0 . 1).(b+c) = b+c+1$
- $(a. 0 . 1)+(b+c) = b+c+1$
- $(a. 1. 0)+(b+c) = b+c+0$
- $(a. 1. 0)(b+c) = b+c$
- None of the above

$f(x) = 2(24 - 5x)^{1/2}$ is a function that is defined for $x \leq 24/5$. Find the inverse function.

Select one:

- $f^{-1}(x) = 12 - x^2/20$
- $f^{-1}(x) = 5/2 + x/4$
- $f^{-1}(x) = 24/5 + x^2/20$
- $f^{-1}(x) = 24/5 - x^2/20$
- None of the above

Next page

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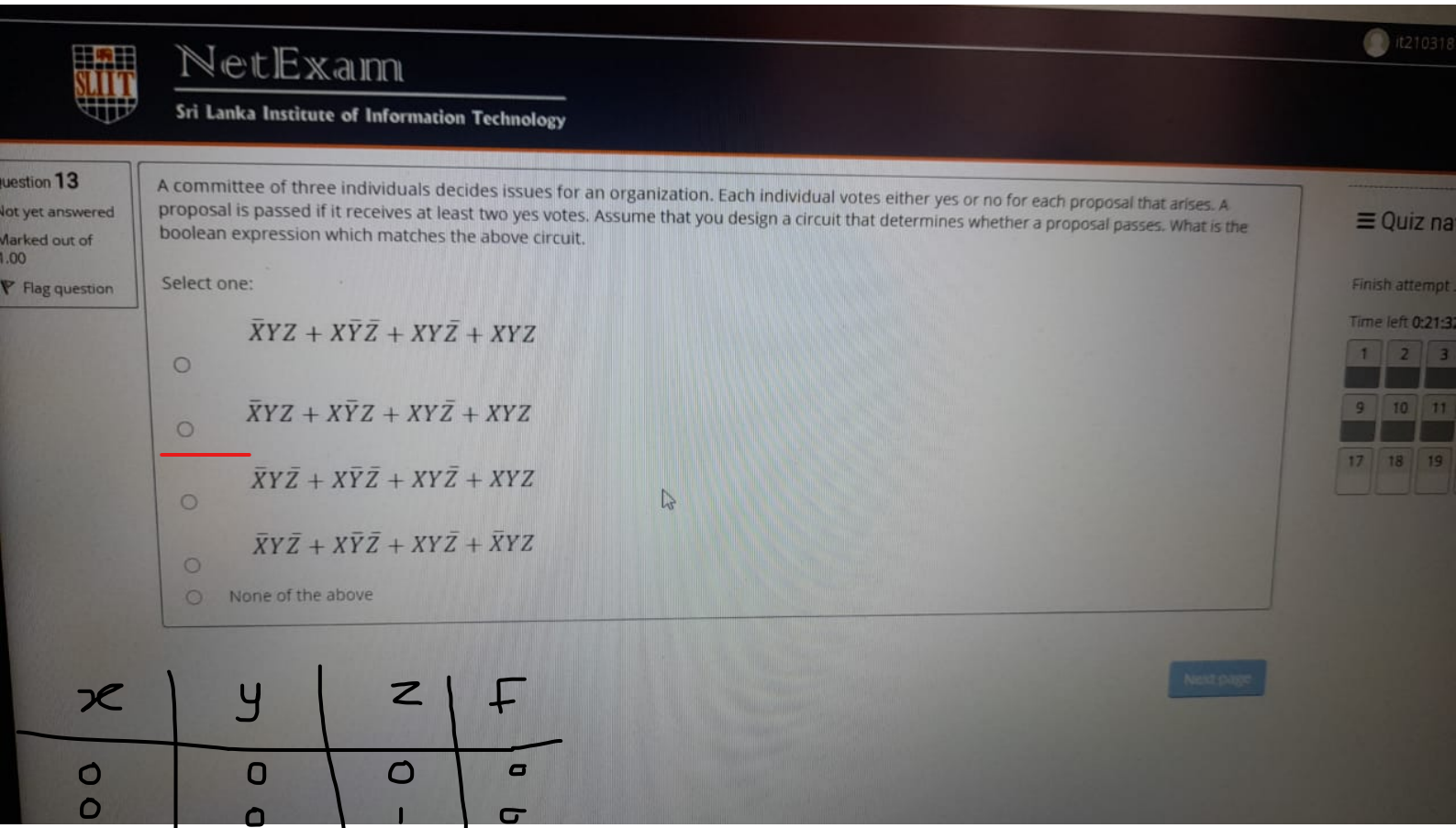
Simplify.

$$\frac{\mathrm{d}}{\mathrm{d}x}\left[(2x-3)^4+\left(x^2+2\right)^2\right]$$

Select one:

- $68x^3-288x^2+424x-216$
- $68x^3-288x^2+440x-216$
- $68x^3-192x^2+184x-64$
- $80x^3-192x^2+176x-64$
- None of the above



x	y	z	f	
0	0	0	0	
0	0	1	0	
0	1	0	0	
0	1	1	1	$\bar{x}yz$
1	0	0	0	
1	0	1	1	$x\bar{y}z$
1	1	0	1	$xy\bar{z}$
1	1	1	1	xyz

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Convert the number 125.125_{10} to the equivalent binary number.

Select one:

- 100010001.01
- 100010001.111
- 100101100.11
- 1111101.001
- None of the above.

Differentiate following function with respect to x

$$\frac{x^2-3}{2x+1}$$

Select one:

- $\frac{2\left(x^2+x+4\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x+3\right)}{(2x+1)^2}$
- $-\frac{2\left(x^2+x+1\right)}{(2x+1)^2}$
- $-\frac{2\left(x^2+x+6\right)}{(2x+1)^2}$
- None of the above

$$\frac{(2x+1)(2x)-(x^2-3)(2)}{(2x+1)}$$

$$\frac{4x^2+2x-2x^2+6}{(2x+1)^2}$$

$$\frac{2x^2+2x+6}{(2x+1)^2}$$

$$\frac{2(x^2+x+3)}{(2x+1)^2}$$

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g question

Select the Correct Answer.

A variant of Associative Law is,

A Variant of Identity Law is,

A Variant of Distributive Law is,

Choose...

Choose...

A .(B.C) = (A.B) . (A.C)

A +(B.C) = (A+B) . (A+C)

(A + B) + C = A + (B + C)

C + 0 = C

(A . B) + C = A + (B . C)

B + 1 = 0

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Question 22

Not yet answered

Marked out of 1.00

Flag question

A = 0111101 + 1001001

Find the 2's Complement of A.

(No spaces should be there in your answer)

Answer: 10111010

Next page

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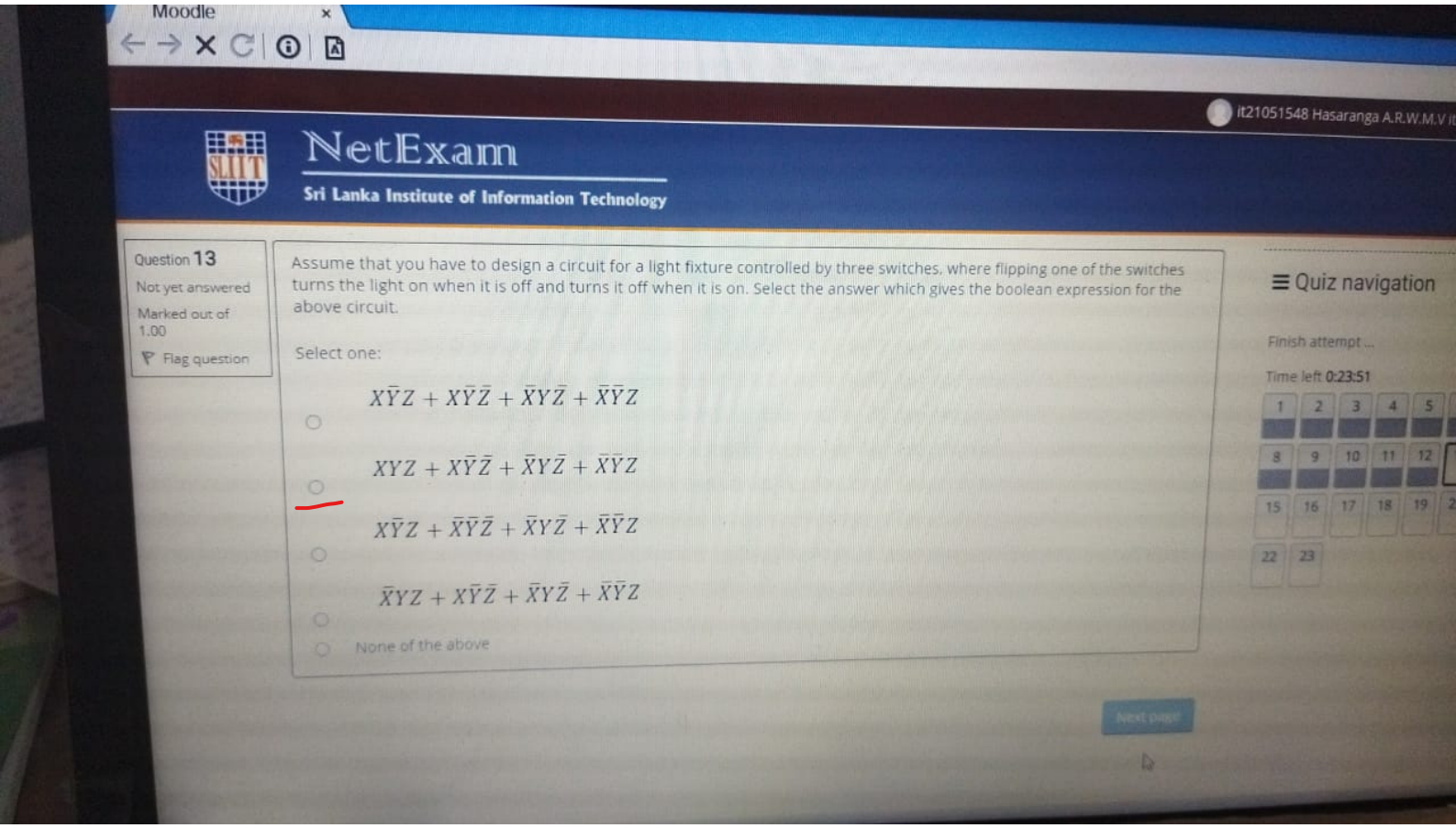
Differentiate the following function with respect to x,

$$\left(\sqrt{x}-3\right)\left(x^2-3x\right)$$

Select one:

- $\sqrt{x}\,(5x-9)-6x+9$
- $\dfrac{\sqrt{x}\,(5x-9)-16x+24}{2}$
- $\dfrac{\sqrt{x}\,(5x-6)-16x+16}{2}$
- $\dfrac{\sqrt{x}\,(5x-9)-12x+18}{2}$
- None of the above



X	Y	Z	F	
0	0	0		
0	0	1	1	$\bar{x}\bar{y}z$
0	1	0	1	$\bar{x}y\bar{z}$
0	1	1		
1	0	0	1	$x\bar{y}\bar{z}$
1	0	1		
1	1	0		
1	1	1	1	xyz

NetExam

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Differentiate with respect to x.

$$(x^2-1)^3 - e^x + \sqrt{x} - 1$$

Select one:

- $\frac{12x^5 + 12x^3 - 1}{2\sqrt{x}}$
- $\frac{12x^5 - 1}{2\sqrt{x}}$
- $\frac{12x^5 + 1}{2x^5}$
- $-2x^6 + 6x^4(x^2-1) - \frac{1}{2x^5}$
- None of the above

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Differentiate, with respect to x,

f(x)= $(2x-1)^4+(x^2-2)^2$

Select one:

- $68x^3-96x^2+36x-8$
- $68x^3-288x^2+424x-216$
- $68x^3-192x^2+184x-64$
- $68x^3-96x^2+40x-8$
- None of the above

F1 F2 F3 F4 F5 F6 F7 F8 F9

function with respect to x,

$$(\sqrt{x}-3)(x^2-3x)$$

Select one:

- $\sqrt{x}(5x-9)-6x+9$
- $\frac{\sqrt{x}(5x-9)-16x+24}{2}$
- $\frac{\sqrt{x}(5x-6)-16x+16}{2}$
- $\frac{\sqrt{x}(5x-9)-12x+18}{2}$
- None of the above

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A committee of three individuals decides issues for an organization. Each individual votes either yes or no for each proposal that arises. A proposal is passed if it receives at least two yes votes. Assume that you design a circuit that determines whether a proposal passes. What is th boolean expression which matches the above circuit.

Select one:

- $\bar{X}YZ + X\bar{Y}\bar{Z} + XY\bar{Z} + XYZ$
- $\bar{X}YZ + X\bar{Y}Z + XY\bar{Z} + XYZ$
- $\bar{X}Y\bar{Z} + X\bar{Y}\bar{Z} + XY\bar{Z} + XYZ$
- $\bar{X}Y\bar{Z} + X\bar{Y}\bar{Z} + XY\bar{Z} + \bar{X}YZ$
- None of the above

X	Y	Z	F
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	1
1	1	1	1

$\bar{X}YZ$

$X\bar{Y}Z$

$XY\bar{Z}$

XYZ

Question 12

Not yet answered

Marked out of 4.00

Flag question

Select the suitable answer for each blank.

Q = (A + B).(A + C)

A.A + A.C + A.B + B.C – Distributive law

A + A.C + A.B + B.C – (1)

A(1 + C) + A.B + B.C – Distributive law

A.1 + A.B + B.C – (2)

A(1 + B) + B.C – Distributive law

A.1 + B.C – (3)

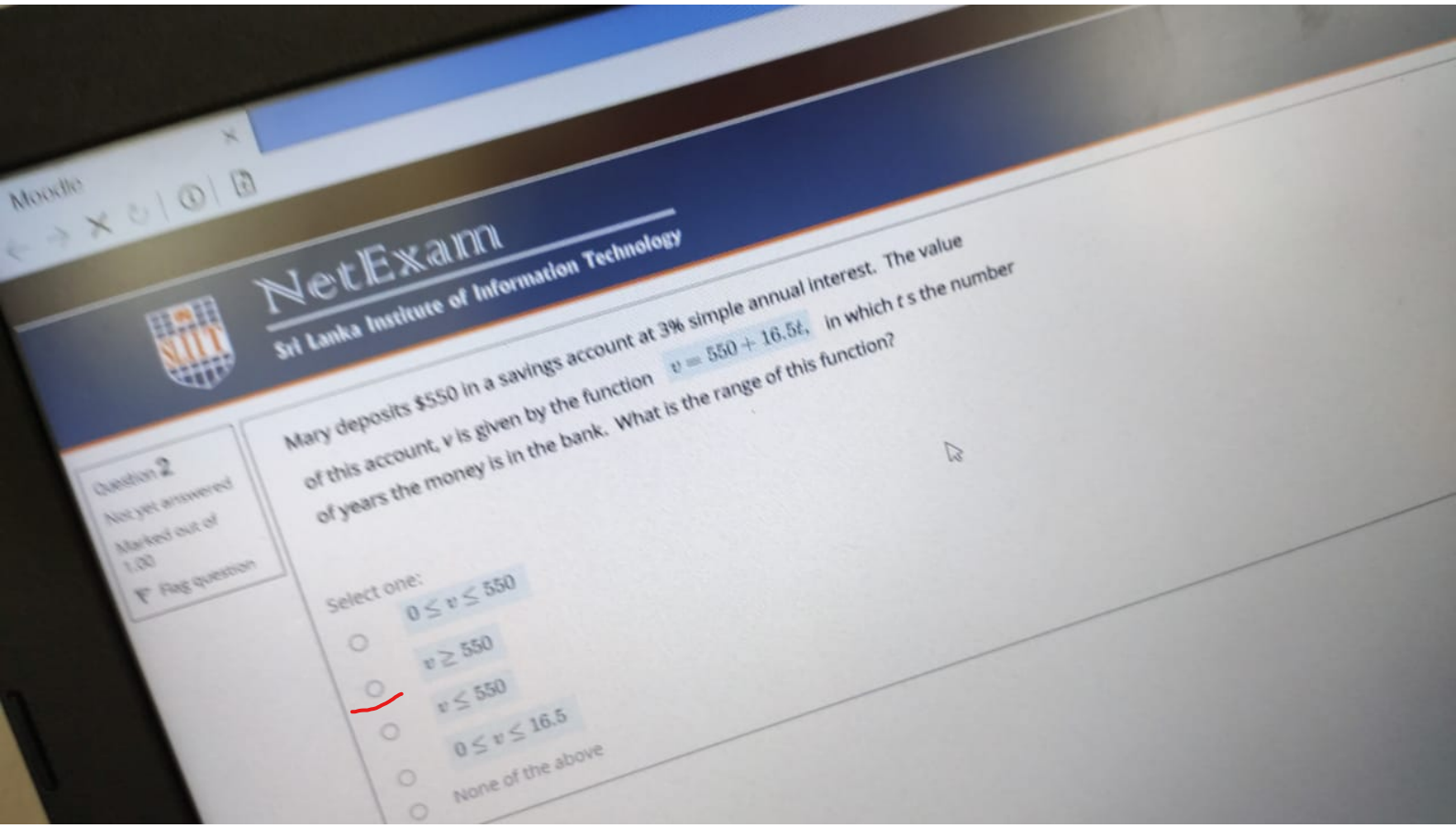
Q = A + (B.C) – (4)

Answer 1: Idempotent Law

Answer 2: Universal Bound Law

Answer 3: Universal Bound Law

Answer 4: Identity Law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Sri Lanka Institute of Information Technology
Question 2
Not yet answered
Marked out of 1.00
Flag question
Mary deposits $550 in a savings account at 3% simple annual interest. The value of this account, v is given by the function v = 550 + 16.5t, in which t s the number of years the money is in the bank. What is the range of this function?
Select one:
0 ≤ v ≤ 550
v ≥ 550
v ≤ 550
0 ≤ v ≤ 16.5
None of the above

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g question

$f(x) = 2(24 - 5x)^{1/2}$ is a function that is defined for $x \leq 24/5$. Find the inverse function.

Select one:

- $f^{-1}(x) = 24/5 - x^2/20$
- $f^{-1}(x) = 5/2 + x/4$
- $f^{-1}(x) = 24/5 + x^2/20$
- $f^{-1}(x) = 12 - x^2/20$
- None of the above

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NetExam

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Simplify

$$\int x^3 - 2x + 5 \, dx$$

$\frac{x^4}{4} - \frac{2x^2}{2} + 5x$

Select one:

- $\frac{x\left(x^3 - 4x + 20\right)}{4} + C$
- $\frac{x^4}{4} + x^2 + 5x + C$
- $\frac{x\left(x^3 - 4x + 12\right)}{4} + C$
- $\frac{x\left(x^3 - 4x - 8\right)}{4} + C$
- None of the above

$\frac{x^4 - 4x^2 + 20x}{4}$

$\frac{x(x^3 - 4x + 20)}{4} =$

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Calculate the 1's complement for the following binary number.

1000111011001

Select one:

- 11101101100011
- 10111111001111
- 111000100110
- 0101010000001
- None of the above.

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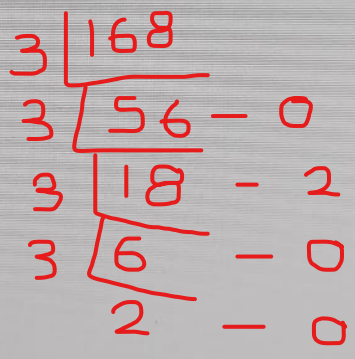
Convert the number 168_{10} to a base 3 number system.

Select one:

- 22001
- 11111
- 10002
- 20020
- None of the above.



Simplify,

$$\frac{\mathrm{d}}{\mathrm{d}x}\left[(2x-3)^4+(x^2-3)^2\right]$$

Select one:

- $68x^3-288x^2+420x$ 216
- $68x^3-288x^2+416x-216$
- $68x^3-96x^2+36x-8$
- $80x^3-192x^2+176x-64$
- None of the above

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Flag question

Mary deposits $550 in a savings account at 3% simple annual interest. The value of this account, v is given by the function $v = 550 + 16.5t$, in which t s the number of years the money is in the bank. What is the range of this function?

Select one:

- $0 \leq v \leq 550$
- $v \geq 550$
- $v \leq 550$
- $0 \leq v \leq 16.5$
- None of the above

Select the suitable answer for each blank.

$Q = (A + B).(A + C)$

$A.A + A.C + A.B + B.C$ – Distributive law

$A + A.C + A.B + B.C$ – (1)

$A(1 + C) + A.B + B.C$ – Distributive law

$A.1 + A.B + B.C$ – (2)

$A(1 + B) + B.C$ – Distributive law

$A.1 + B.C$ – (3)

$Q = A + (B.C)$ – (4)

Answer 1 Choose... Idempotent

Answer 2 Choose... null

Answer 3 Choose... null

Answer 4 Choose... Identity

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uestion 3

ot yet answered

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.00

Flag question

The inverse of function $f(x) = x^3 + 2$ is _____.

Select one:

- $f^{-1}(x) = (x-2)^{1/3}$
- $f^{-1}(x) = (x-2)^{1/2}$
- $f^{-1}(x) = x^{1/3}$
- $f^{-1}(x) = x - 2$
- None of the above

$x^3 = y - 2$

$x = (y-2)^{1/3}$

$= (x-2)^{1/3}$

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Find,

$$\frac{d}{dx}\left[\left(2\sqrt{x}-3\right)\left(x^2-4x\right)\right]$$

Select one:

- $\sqrt{x}\,(5x-12)-6x+12$
- $\sqrt{x}\,(5x-9)-6x+9$
- $\dfrac{\sqrt{x}\,(5x-15)-12x+30}{2}$
- $\dfrac{\sqrt{x}\,(5x-3)-16x+8}{2}$
- None of the above

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Convert the number 300.75_{10} to the equivalent binary number.

Select one:

- 100010001.01
- 100010001.111
- 100101100.11
- 1111101.001
- None of the above.

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g question

Differentiate the following function with respect to x

$$x^{-2} - 3x + 3$$

Select one:

- $-\frac{2}{x^3} - 3$
- $-\frac{1}{x^3} - 3$
- $-\frac{1}{x^3} - 4$
- $\frac{1}{5x^2}$
- None of the above.

$-2x^{-3} - 3$

$-\frac{2}{x^3} - 3$

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Question 4

Not yet answered

Marked out of 1.00

Flag question

Find the value of the following definite integral.

$$\int_{-1}^{1} \frac{(x+2)^2}{x^4}\,dx$$

Select one:

- -7
- -14/3
- 14/3
- 3/14
- None of the above

$$\frac{x^2+4x+4}{x^4}$$

$$x^{-4}(x^2+4x+4)$$

$$x^{-2}+4x^{-3}+4x^{-4}$$

$$\frac{x^{-1}}{-1}+\frac{4x^{-2}}{-2}+\frac{4x^{-3}}{-3}$$

$$\left[\frac{1}{-1}+\frac{4}{-2}+\frac{4}{-3}\right]-\left[\frac{1}{1}+\frac{4}{-2}+\frac{4}{3}\right]$$

$$\frac{6+12+8}{-6}-\left(\frac{-6+12-8}{-6}\right)$$

$$\frac{26}{-6}\,\frac{13}{3}-\left(\frac{-2}{-6}\,\frac{1}{3}\right)=\frac{13+1}{-3}=\frac{14}{-3}$$

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Differentiate the following function with respect to t,

$$5t^3 + \frac{1}{t^{\frac{5}{3}}} - 3$$

$15t^2 - \frac{5}{2}t^{-\frac{7}{2}}$

$15t^2 - \frac{5}{2t^{\frac{7}{2}}}$

Select one:

- $15t^2 - \frac{5}{2t^{\frac{7}{3}}}$
- $15t^2 + \frac{5t^{\frac{3}{3}}}{2}$
- $15t^2 - \frac{5}{2t^{\frac{7}{3}}} - 3$
- $15t^2 - \frac{5}{2t^{\frac{7}{3}}}$
- None of the above

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Simplify

$$\int (x^3 - 6x + 8)\,dx$$

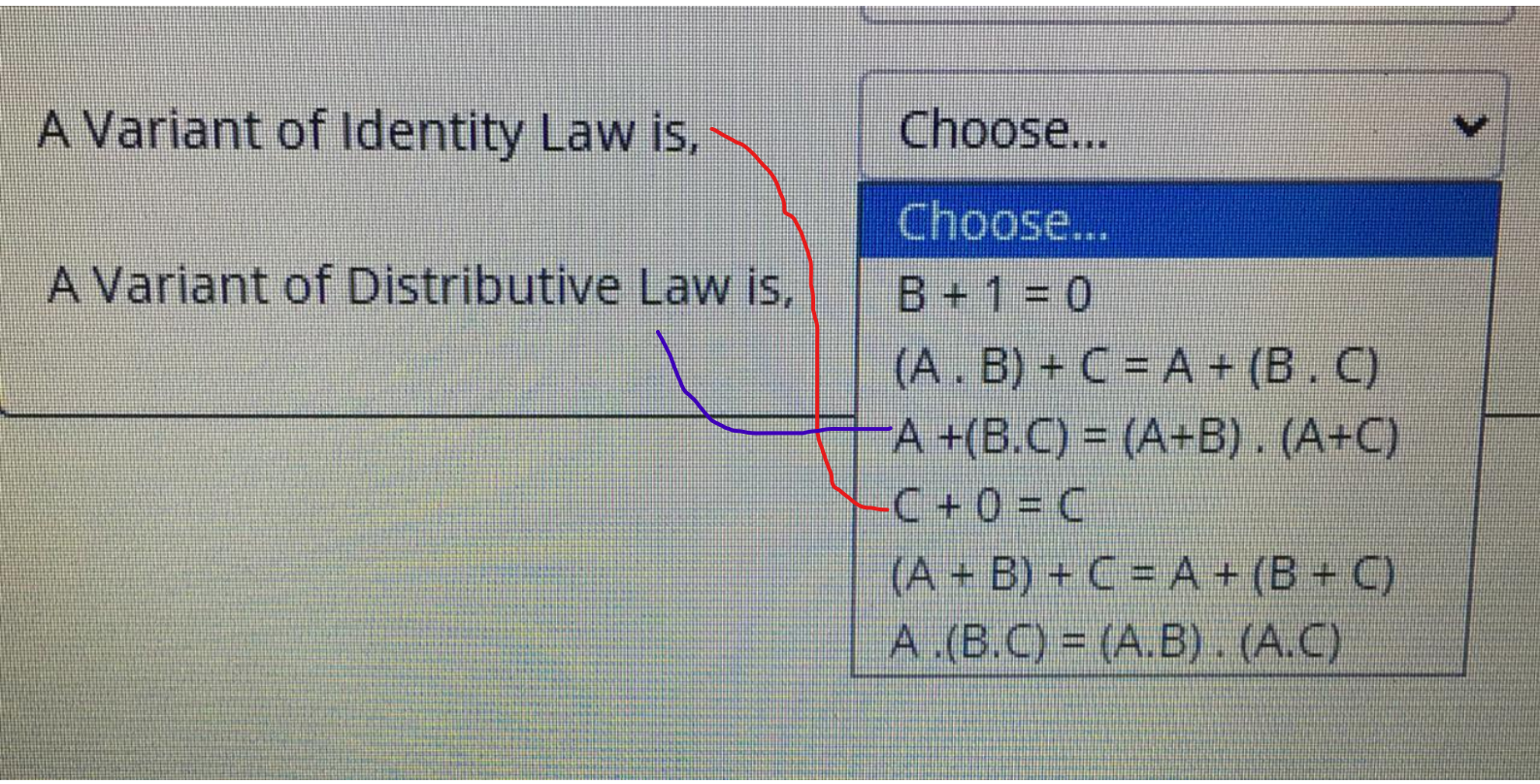
Select one:

- $\frac{x\left(x^3 - 12x + 32\right)}{4} + C$
- $\frac{x^4}{4} + x^2 + 5x + C$
- $\frac{x\left(x^3 - 4x + 12\right)}{4} + C$
- $\frac{x\left(x^3 - 4x - 8\right)}{4} + C$
- None of the above

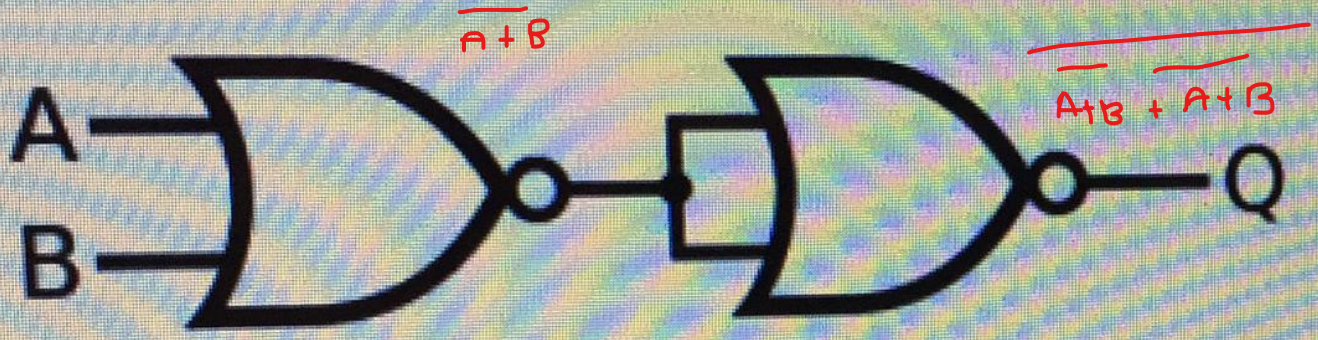
$\frac{x^4}{4} - \frac{6x^2}{2} + 8x$

$\frac{x^4 - 12x^2 + 32x}{4}$

$\frac{x(x^3 - 12x - 32)}{4}$


A Variant of Identity Law is,
A Variant of Distributive Law is,
Choose...
Choose...
B + 1 = 0
(A . B) + C = A + (B . C)
A +(B.C) = (A+B) . (A+C)
C + 0 = C
(A + B) + C = A + (B + C)
A .(B.C) = (A.B) . (A.C)

Following circuit is equivalent to;



Select one:

- OR Gate
- AND Gate
- NAND Gate
- NOT Gate
- None of the above

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Question 13

Not yet answered

Marked out of 1.00

Flag question

Assume that you have to design a circuit for a light fixture controlled by two switches, where flipping one of the switches turns the light on when it is off and turns it off wh

Select the answer which gives the boolean expression for the above circuit.

Select one:

- $XY + \bar{X}.\bar{Y}$
- $X\bar{Y} + \bar{X}.Y$
- $\overline{XY} + X.Y$
- $\overline{XY} + \bar{X}.Y$
- None of the above

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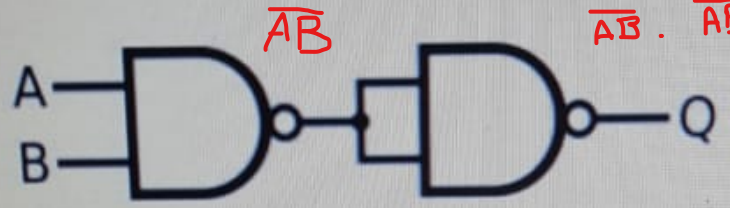
Following circuit is equivalent to;



$\overline{AB}$

$\overline{\overline{AB} \cdot \overline{AB}}$

$\overline{\overline{AB} \cdot \overline{AB}}$

$\overline{\overline{AB}} + \overline{\overline{AB}}$

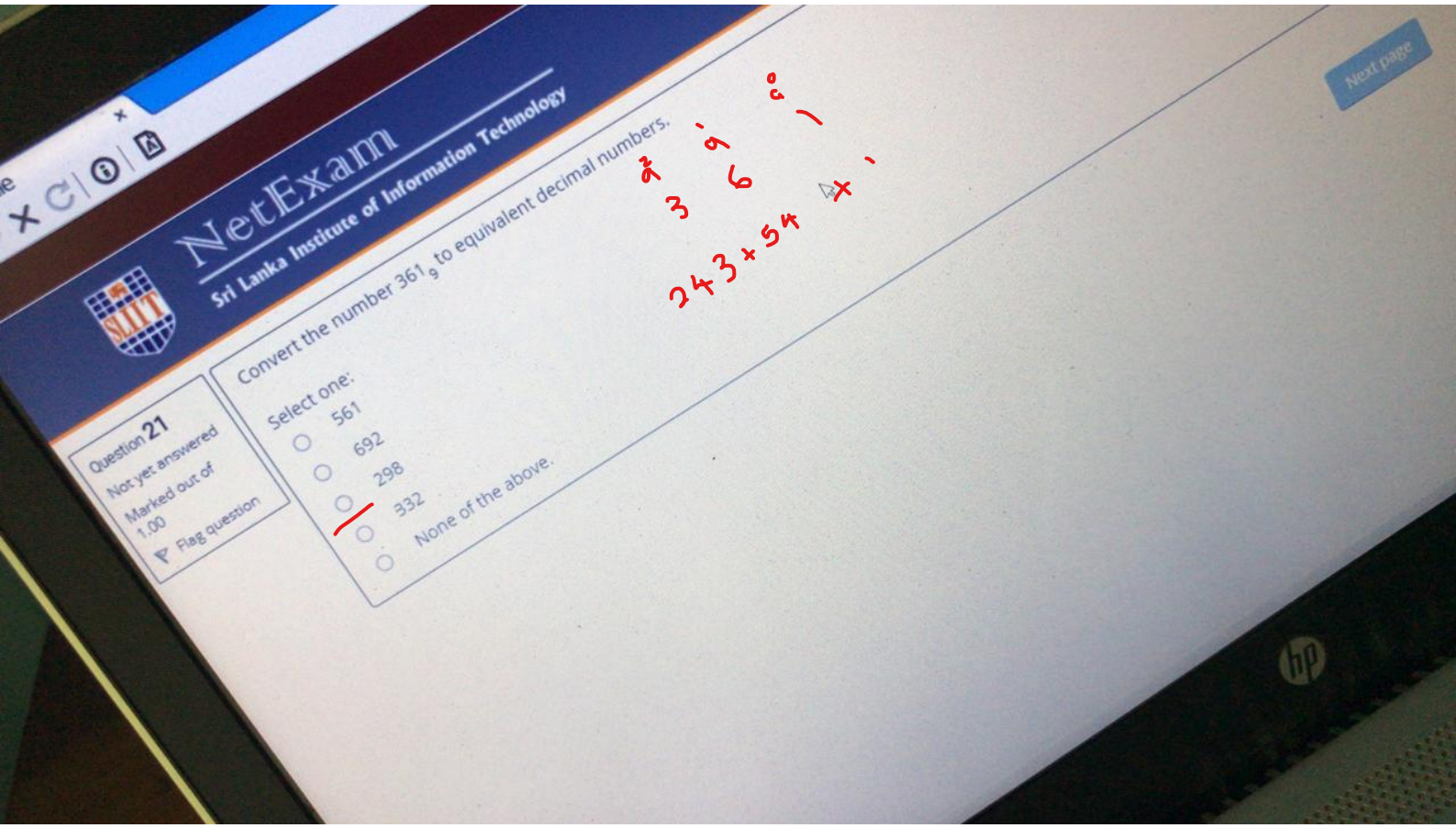
$\overline{\overline{A}+\overline{B}} \cdot \overline{\overline{A}+\overline{B}}$

$\overline{\overline{A} \cdot \overline{B}}$

AB

Select one:

- OR Gate
- AND Gate
- NOR Gate
- NAND Gate
- None of the above


NetExam
Sri Lanka Institute of Information Technology
Next page
Question 21
Not yet answered
Marked out of 1.00
Flag question
Convert the number 361_9 to equivalent decimal numbers.
Select one:
561
692
298
332
None of the above.

Sri Lanka Institute of Information Technology

A function is said to be _____, if and only if $f(a) = f(b)$ implies that $a = b$ for all a and b in the domain of f.

Select one:

- one-to-one
- one-to-many
- many-to-many
- many-to-one
- None of the above

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Find the dual of the following expression.

a.1 = (a+b+c+1).a

Select one:

- a = (a.b.c)+a
- a+1 = (a.b.c.1)+a
- a+0 = (a.b.c.0)+a
- a+0 = (a.b.c.1)+a
- None of the above

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Sri Lanka Institute of Information Technology

Question 12

Not yet answered

Marked out of 4.00

Flag question

Select the suitable answer for each blank.

Q = (A + B).(A + C)

A.A + A.C + A.B + B.C – Distributive law

A + A.C + A.B + B.C – (1)

A(1 + C) + A.B + B.C – Distributive law

A.1 + A.B + B.C – (2)

A(1 + B) + B.C – Distributive law

A.1 + B.C – (3)

Q = A + (B.C) – (4)

Answer 1: Choose... Idempotent

Answer 2: Choose... Null

Answer 3: Choose... Null

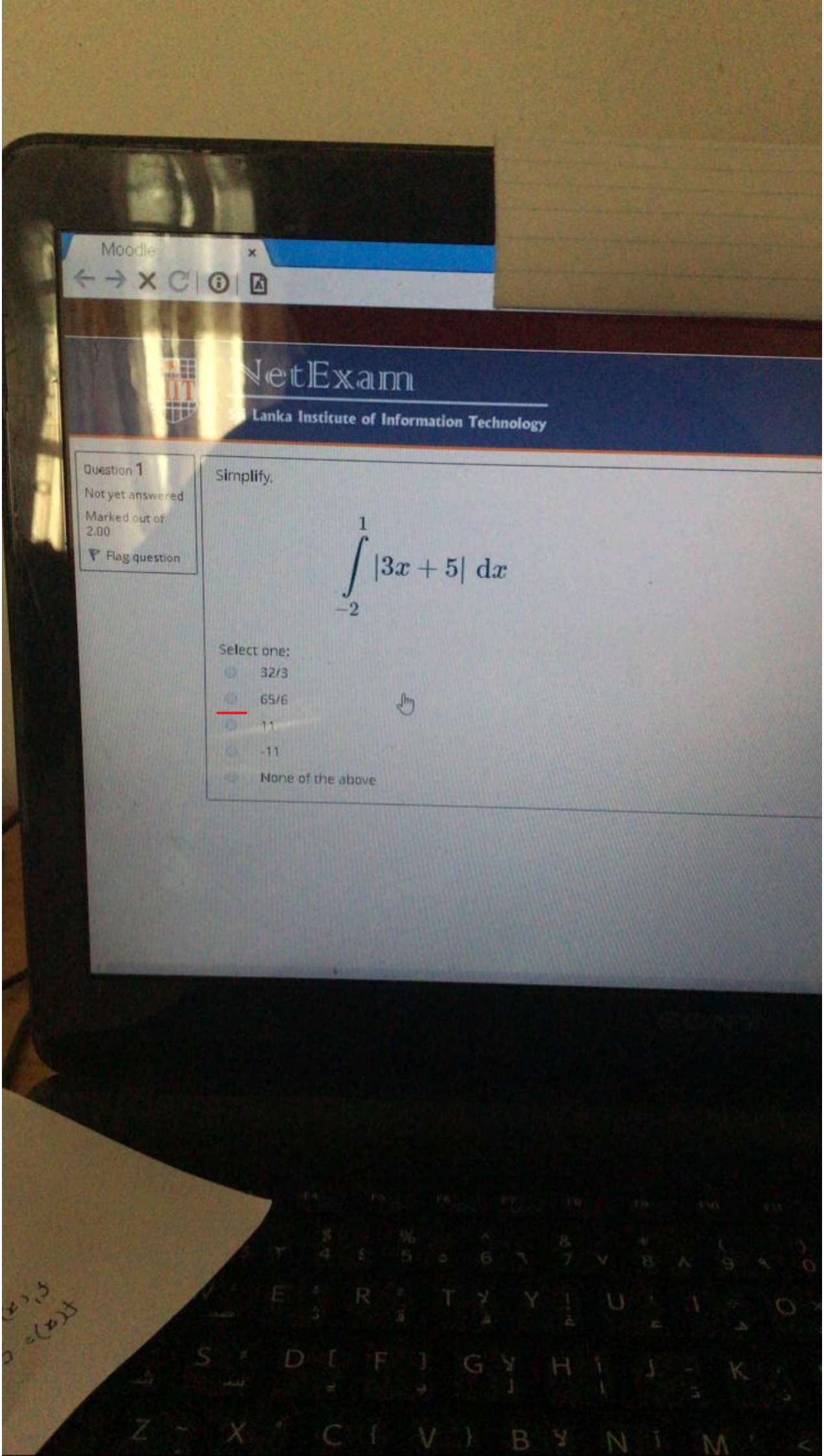
Answer 4: Choose... Identity

Simplify,

$$\frac{\mathrm{d}}{\mathrm{d}x}\left[(2x-3)^4+(x^2-3)^2\right]$$

Select one:

- $68x^3-288x^2+420x$ 216
- $68x^3-288x^2+416x-216$
- $68x^3-96x^2+36x-8$
- $80x^3-192x^2+176x-64$
- None of the above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Lanka Institute of Information Technology
Question 1
Not yet answered
Marked out of 2.00
Flag question
Simplify.
$\int_{-2}^{1} |3x+5| \, dx$
Select one:
32/3
65/6
11
-11
None of the above

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Sri Lanka Institute of Information Technology

Convert the number 167_{10} to a base 11 positional number system.

Select one:

- 20A
- 812
- 113
- 11B
- None of the above.

11 | 167
11 | 15 – 2
1 – 4

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Differentiate the following function with respect to x,

$$(\sqrt{x}-3)\,(x^2-3x)$$

Select one:

- $\sqrt{x}\,(5x-9)-6x+9$
- $\dfrac{\sqrt{x}\,(5x-9)-16x+24}{2}$
- $\dfrac{\sqrt{x}\,(5x-6)-16x+16}{2}$
- $\dfrac{\sqrt{x}\,(5x-9)-12x+18}{2}$
- None of the above

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Differentiate.

$$\frac{\mathrm{d}}{\mathrm{d}x}\left[\left(\sqrt{x}-3\right)\left(x^2-4x\right)\right]$$

Select one:

- $\frac{\sqrt{x}\,(5x-12)-12x+24}{2}$
- $\frac{\sqrt{x}\,(5x-9)-12x+18}{2}$
- $\frac{\sqrt{x}\,(5x-6)-16x+16}{2}$
- $\sqrt{x}\,(5x-9)-6x+9$
- None of the above

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Select the suitable answer for each blank.

Proof: $a(a + b)$

$= (a+0)(a + b)$ (1)

$= a+0 \cdot b$ (2)

$= a + 0$ (3)

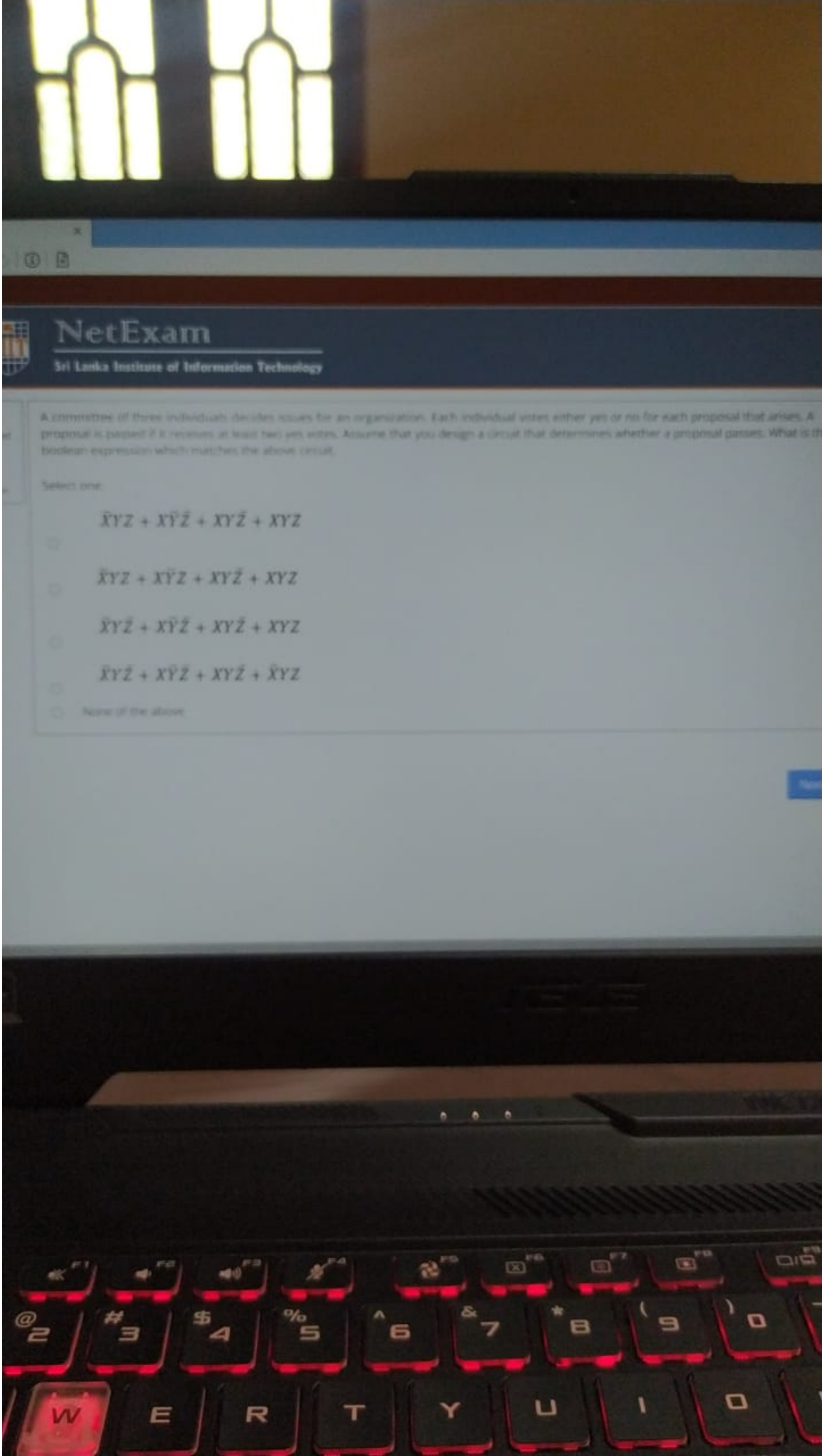
$= a$ (4)

Answer 1: Distributive Law — Identity

Answer 2: IdentityLaw — Absorption

Answer 3: Universal Bound Law ✓

Answer 4: IdentityLaw ✓


NetExam
Sri Lanka Institute of Information Technology
A committee of three individuals decides issues for an organization. Each individual votes either yes or no for each proposal that arises. A proposal is passed if it receives at least two yes votes. Assume that you design a circuit that determines whether a proposal passes. What is th
boolean expression which matches the above circuit.
Select one
$\bar{X}YZ + X\bar{Y}\bar{Z} + XY\bar{Z} + XYZ$
$\bar{X}YZ + X\bar{Y}Z + XY\bar{Z} + XYZ$
$\bar{X}Y\bar{Z} + X\bar{Y}\bar{Z} + XY\bar{Z} + XYZ$
$\bar{X}Y\bar{Z} + X\bar{Y}\bar{Z} + XY\bar{Z} + \bar{X}YZ$
None of the above

NetExam

Sri Lanka Institute of Information Technology

Differentiate with respect to t,

$$24t^2 + \frac{1}{t^{\frac{3}{2}}} - 3$$

Select one:

- $24t - \frac{3}{2t^{\frac{5}{2}}}$
- $48t - \frac{3}{2t^{\frac{5}{2}}} - 3$
- $48t - \frac{3}{2t^{\frac{5}{2}}}$
- $48t + \frac{3\sqrt{t}}{2} - 3$
- None of the above

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Sri Lanka Institute of Information Technology

Question 11

Not yet answered

Marked out of 1.00

Flag question

Find the dual of the following expression.

(a + 0).(b + 1) = a

Select one:

- (a.1)+(b.0)=a
- (a.1)(b.0)=a
- (a.1)+(b.1)=a
- (a.1)+(b.0)=b
- None of the above

Simplify,

$$\int_{2}^{3} |2x - 5| \, dx$$

Select one:

- -0.5
- 0.5
- 1
- -1
- 2

Moodle

NetExam

Sri Lanka Institute of Information Technology

Question 5

Not yet answered

Marked out of 1.00

Flag question

Differentiate, with respect to x.

f(x)= $(2x-1)^4+(x^2-2)^2$

Select one:

- $68x^3-96x^2+36x-8$
- $68x^3-288x^2+424x-216$
- $68x^3-192x^2+184x-64$
- $68x^3-96x^2+40x-8$
- None of the above

Simplify,

$$\frac{\mathrm{d}}{\mathrm{d}x}\left[(2x-3)^4+\left(x^2+2\right)^2\right]$$

Select one:

- $68x^3-288x^2+424x-216$
- $68x^3-288x^2+440x-216$
- $68x^3-192x^2+184x-64$
- $80x^3-192x^2+176x-64$
- None of the above

Next page

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Sri Lanka Institute of Information Technology

Select the Correct Answer.

A variant of Associative Law is. Choose...

A Variant of Identity Law is. Choose...

A Variant of Distributive Law is. Choose...

on 11
t answered
d out of
g question

Find the dual of the following expression.

a.1 = (a+b+c+1).a

Select one:

- a = (a.b.c)+a
- a+1 = (a.b.c.1)+a
- a+0 = (a.b.c.0)+a
- a+0 = (a.b.c.1)+a
- None of the above

Differentiate, with respect to x,

f(x)= $(2x-1)^4+(x^2-2)^2$

Select one:

- $68x^3-96x^2+36x-8$
- $68x^3-288x^2+424x-216$
- $68x^3-192x^2+184x-64$
- $68x^3-96x^2+40x-8$
- None of the above

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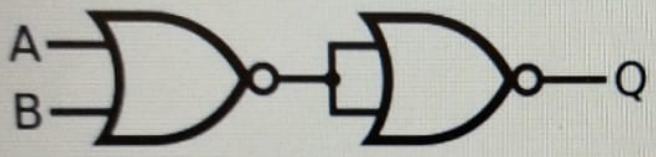
Question 14

Not yet answered

Marked out of 1.00

Flag question

Following circuit is equivalent to:



Select one:

- OR Gate
- AND Gate
- NAND Gate
- NOT Gate
- None of the above

$\overline{A+B} \cdot \overline{A+B}$

$A+B$

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Simplify,

$$\frac{\mathrm{d}}{\mathrm{d}x}\left[(2x-3)^4+\left(x^2+2\right)^2\right]$$

Select one:

- $68x^3-288x^2+424x-216$
- $68x^3-288x^2+440x-216$
- $68x^3-192x^2+184x-64$
- $80x^3-192x^2+176x-64$
- None of the above

Differentiate, with respect to x,

f(x)= $(2x-1)^4+(x^2-2)^2$

Select one:

- $68x^3-96x^2+36x-8$
- $68x^3-288x^2+424x-216$
- $68x^3-192x^2+184x-64$
- $68x^3-96x^2+40x-8$
- None of the above

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Simplify the following boolean expression.

$$\overline{A}\,B\overline{C} + A\,\overline{B}\,\overline{C} + \overline{A}\,\overline{B}\,\overline{C} + \overline{A}\,\overline{B}\,C$$

Select one:

- $\bar{A}\bar{B}\bar{C}$
- $\bar{B}\bar{C}$
- $(\bar{A}+\bar{B})\bar{C}$
- $(A+\bar{B})\bar{C}$
- None of the above

$\overline{A}B\overline{C} + A\bar{B}\bar{C} + \bar{A}\bar{B}\bar{C}$

$\bar{A}\bar{C}(B+\bar{B}) + A\bar{B}\bar{C}$

$\bar{A}\bar{C} + A\bar{B}\bar{C}$

$\bar{C}(\bar{A}+A\bar{B})$

$\bar{C}(\bar{A}+\bar{B})$

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Question 5

Answered

Out of

Question

Simplify.

$$\frac{\mathrm{d}}{\mathrm{d}x}\left[(2x-3)^4+(x^2-3)^2\right]$$

Select one:

- $68x^3-288x^2+420x-216$
- $68x^3-288x^2+416x-216$
- $68x^3-96x^2+36x-8$
- $80x^3-192x^2+176x-64$
- None of the above

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A committee of three individuals decides issues for an organization. Each individual votes either yes or no for each proposal that arises. A proposal is passed if it receives at least two yes votes. Assume that you design a circuit that determines whether a proposal passes. What is the boolean expression which matches the above circuit.

Select one:

- XY + XZ + YZ
- XYZ + XZ
- XY + XZ
- X.(Y+Z)
- None of the above

X	Y	Z	F
0	0	0	
0	0	1	
0	1	0	
0	1	1	
1	0	0	
1	0	1	
1	1	0	
1	1	1	

$Y(z + x\bar{z}) + zx$

$Y(z + x) + zx$

$Yz + Yx + zx$

$\bar{x}yz + x\bar{y}z + xy\bar{z} + xyz$

$yz(x + \bar{x}) + x\bar{y}z + xy\bar{z}$

$z(y + x\bar{y}) + xy\bar{z}$

$z(y + x) + xy\bar{z}$

$zy + zx + xy\bar{z}$

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Find the value of the following definite integral.

$$\int_1^7 x^2 \, dx$$

$$\frac{x^3}{3}$$

$$\frac{7^3}{3} - \frac{1^3}{3}$$

$$\frac{343 - 1}{3}$$

$$\frac{342}{3}$$

114

Select one:

- 116
- 120
- 115
- 114
- None of the above

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Question 13

Not yet answered

Marked out of 1.00

Flag question

A committee of three individuals decides issues for an organization. Each individual votes either yes or no for each proposal that arises. A proposal is passed if it receives at least two yes votes. Assume that you design a circuit that determines whether a proposal passes. What is the boolean expression which matches the above circuit.

Select one:

- XY + XZ + YZ
- XYZ + XZ
- XY + XZ
- X.(Y+Z)
- None of the above

Next page

Quiz naviga

Finish attempt ...

Time left 0:22:26

1 2 3

9 10 11

17 18 19

Differentiate with respect to x.

$$(x^3-1)^2-x^6+\sqrt{x}-1$$

Select one:

- $-\frac{12x^{\frac{9}{2}}+12x^{\frac{5}{2}}-1}{2\sqrt{x}}$
- $-\frac{12x^{\frac{5}{2}}-1}{2\sqrt{x}}$
- $-\frac{12x^{\frac{7}{2}}+1}{2x^{\frac{3}{2}}}$
- $-7x^6+6x^2\left(x^3-1\right)-\frac{1}{2x^{\frac{3}{2}}}$
- None of the above

fferentiate.

$$\frac{\mathrm{d}}{\mathrm{d}x}\left[\left(\sqrt{x}-3\right)\left(x^2-4x\right)\right]$$

elect one:

- $\dfrac{\sqrt{x}\,(5x-12)-12x+24}{2}$
- $\dfrac{\sqrt{x}\,(5x-9)-12x+18}{2}$
- $\dfrac{\sqrt{x}\,(5x-6)-16x+16}{2}$
- $\sqrt{x}\,(5x-9)-6x+9$
- None of the above

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Find the value of the following definite integral.

$$\int_{-3}^{3} x^3 - x \, dx$$

Select one:

- 5
- -10
- 0
- 4
- None of the above

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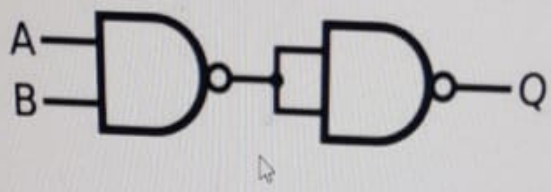
1.00

Flag question

Following circuit is equivalent to;



Select one:

- OR Gate
- AND Gate
- NOR Gate
- NAND Gate
- None of the above

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Differentiate with respect to x,

$$-12x^2 + x^{\frac{3}{2}} - 3$$

Select one:

- $\frac{1}{2\sqrt{x}} - 24x$
- $-24x + \frac{3\sqrt{x}}{2} - 3$
- $24x + \frac{3\sqrt{x}}{2}$
- $\frac{3\sqrt{x}}{2} - 24x$
- None of the above

$-24x + \frac{3\sqrt{x}}{2}$

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Question 2

Not yet answered

Marked out of 1.00

Flag question

Mary deposits $550 in a savings account at 3% simple annual interest. The value of this account, v is given by the function $v = 550 + 16.5t$, in which t s the number of years the money is in the bank. What is the range of this function?

Select one:

- $0 \leq v \leq 550$
- $v \geq 550$
- $v \leq 550$
- $0 \leq v \leq 16.5$
- None of the above

Next page

Quiz navigation

Finish attempt ...

Time left 0:55:59

1 2 3 4 5 6 7 8

9 10 11 12 13 14 15 16

17 18 19 20 21 22 23

uestion 22

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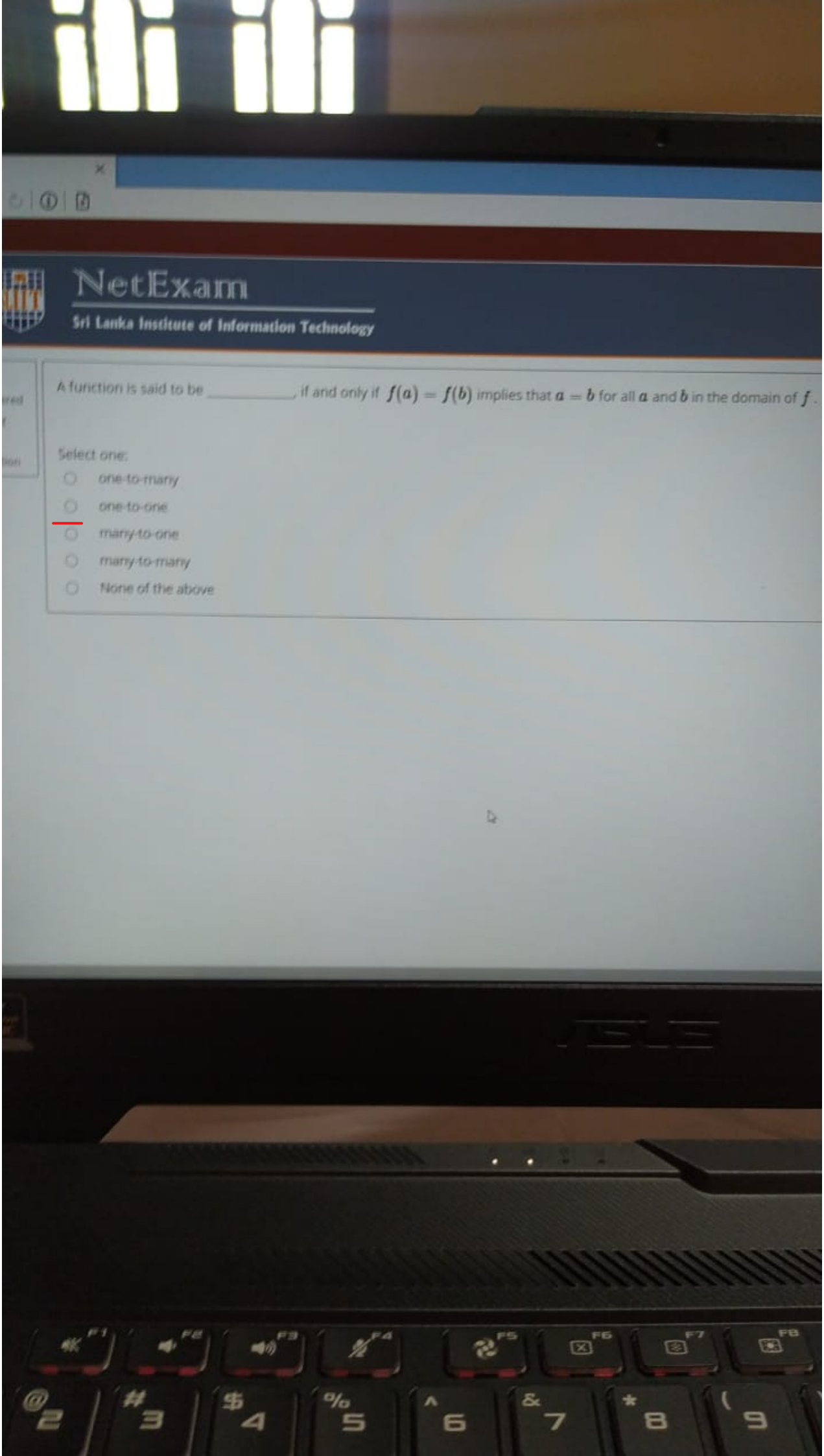
Flag question

A = 0111101 + 1001001

Find the 2's Complement of A.

(No spaces should be there in your answer)

Answer: 10111019


NetExam
Sri Lanka Institute of Information Technology
A function is said to be _____, if and only if $f(a) = f(b)$ implies that $a = b$ for all a and b in the domain of f.
Select one:
one-to-many
one-to-one
many-to-one
many-to-many
None of the above

n 2
answered
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question

Mary deposits $ 450 in a savings account at 2.5% simple annual interest. The value of this account, v, is given by the function $v = 450 + 12.5t$, in which t is the number of years the money is in the bank. What is the range of this function?

Select one:

- $0 \leq v \leq 450$
- $v \leq 450$
- $v \geq 450$
- $0 \leq v \leq 12.5$
- None of the above

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Select the suitable answer for each blank.

Proof: $a(a + b)$

$= (a+0)(a + b)$ (1)

$= a+0 \cdot b$ (2)

$= a + 0$ (3)

$= a$ (4)

Answer 1 Choose...

Answer 2 Choose...

Answer 3 Choose...

Answer 4 Choose...

Mary deposits $ 450 in a savings account a

of this account, v, is given by the function

of years the money is in the bank. What is

Select one:

- $0 \leq v \leq 450$
- $v \leq 450$
- $v \geq 450$
- $0 \leq v \leq 12.5$
- None of the above

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estion 4

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00

Flag question

Find the value of $\int_{\frac{3\pi}{2}}^{0} f(x)\ dx$, given that $\int_{0}^{\frac{3\pi}{2}} f(x)\ dx = \frac{21}{4}$.

Select one:

- - 21/4
- 0
- 21/4
- 7
- None of the above.

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Select the suitable answer for each blank.

Proof: $a(a + b)$

$= (a+0)(a + b)$ (1)

$= a+0 \cdot b$ (2)

$= a + 0$ (3)

$= a$ (4)

Answer 1 Choose... Identity

Answer 2 Choose... Absorption

Answer 3 Choose... null

Answer 4 Choose... Identity

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estion 16

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Flag question

Calculate the 1's complement for the following binary

1000111011001

Select one:

- 111011011000 11
- 101111111001111
- 111000100110
- 0101010000001
- None of the above.

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Find the value of $\int_0^{\frac{21}{4}} f(t)\,dt$, given that $\int_{\frac{21}{4}}^{0} f(t)\,dt = 7$.

Select one:

- -6
- 0
- 9
- 21/8
- None of the above.

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Question 12

Not yet answered

Marked out of 4.00

Flag question

Select the suitable answer for each blank.

$$A + \overline{A}\,B = A\,1 + \overline{A}\,B$$
$$= A\,(1 + B) + \overline{A}\,B \quad [\_\_1\_\_]$$
$$= A + A\,B + \overline{A}\,B \quad [\_\_2\_\_]$$
$$= A + B\,(A + \overline{A}) \quad [\_\_3\_\_]$$
$$= A + B \quad [\_\_4\_\_]$$

null

Distributive

))

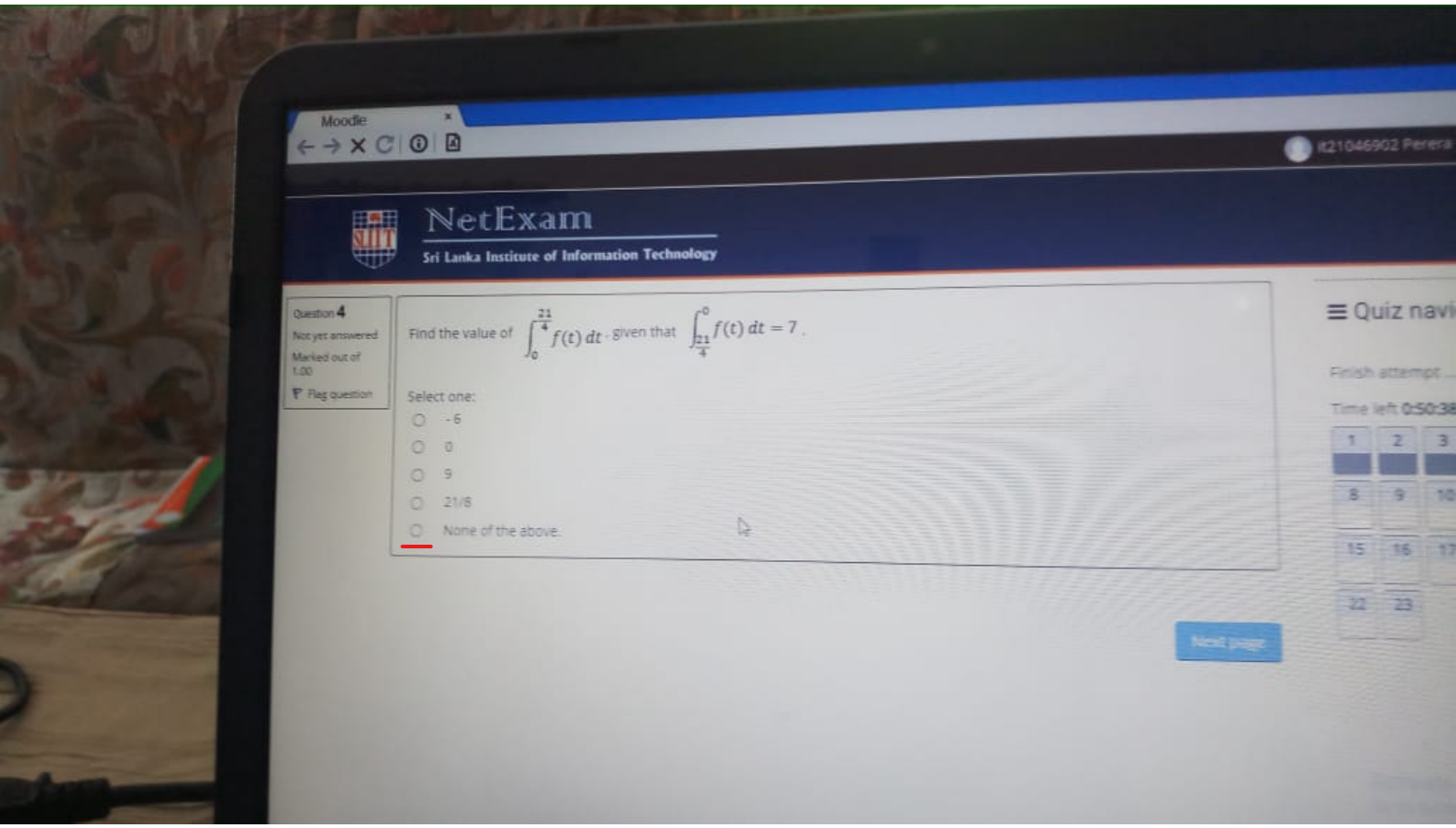
Inverse

Answer 1 Choose...

Answer 2 Choose...

Answer 3 Choose...

Answer 4 Choose...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NetExam
Sri Lanka Institute of Information Technology
Question 4
Not yet answered
Marked out of 1.00
Flag question
Find the value of $\int_0^{\frac{21}{4}} f(t)\,dt$, given that $\int_{\frac{21}{4}}^{0} f(t)\,dt = 7$.
Select one:
-6
0
9
21/8
None of the above.
Quiz navi
Finish attempt
Time left 0:50:38
1
2
3
8
9
15
16
22
23
Next page

fferentiate the following function with respect to x

$$(\sqrt{x} - 3)(x^2 - 3x)$$

Select one:

- $\sqrt{x}(5x - 9) - 6x + 9$
- $\frac{\sqrt{x}(5x - 9) - 16x + 24}{2}$
- $\frac{\sqrt{x}(5x - 6) - 16x + 16}{2}$
- $\frac{\sqrt{x}(5x - 9) - 12x + 18}{2}$
- None of the above

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Find the dual of the following expression.

a.b.c.0 = (a+b+1).0

Select one:

- a+b+c+1 = 1
- a+b+c+0 = (a.b.1)+1
- a+b+c+1 = (a.b.1)+1
- a+b+c+0 = (a.b.1)+0
- None of the above

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Question 13

Not yet answered

Marked out of 1.00

Flag question

A committee of three individuals decides issues for an organization. Each individual votes either yes or no for each proposal that arises. A proposal is passed if it receives at least two yes votes. Assume that you design a circuit that determines whether a proposal passes. What is the boolean expression which matches the above circuit.

Select one:

- XY + XZ + YZ
- XYZ + XZ
- XY + XZ
- X.(Y+Z)
- None of the above

Quiz

Finish atte

Time left 0

1 2 9 10 17 18

Next page

Question 6

Not yet answered

Marked out of 1.00

Flag question

Differentiate,

$$\frac{\mathrm{d}}{\mathrm{d}x}\left[\left(\sqrt{x}-3\right)\left(x^2-4x\right)\right]$$

Select one:

- $\frac{\sqrt{x}\,(5x-12)-12x+24}{2}$
- $\frac{\sqrt{x}\,(5x-9)-12x+18}{2}$
- $\frac{\sqrt{x}\,(5x-6)-16x+16}{2}$
- $\sqrt{x}\,(5x-9)-6x+9$
- None of the above

Next page

Sri Lan[illegible] of Information Technology

Question 8

Not yet answered

Marked out of 1.00

Flag question

Differentiate with respect to t.

$$24t^2 + \frac{1}{t^{\frac{1}{2}}} - 3$$

Select one:

- $24t - \frac{3}{2t^{\frac{1}{2}}}$
- $48t - \frac{3}{2t^{\frac{1}{2}}} - 3$
- $48t - \frac{3}{2t^{\frac{1}{2}}}$
- $48t + \frac{3\sqrt{t}}{2} - 3$
- None of the above

NetExamn

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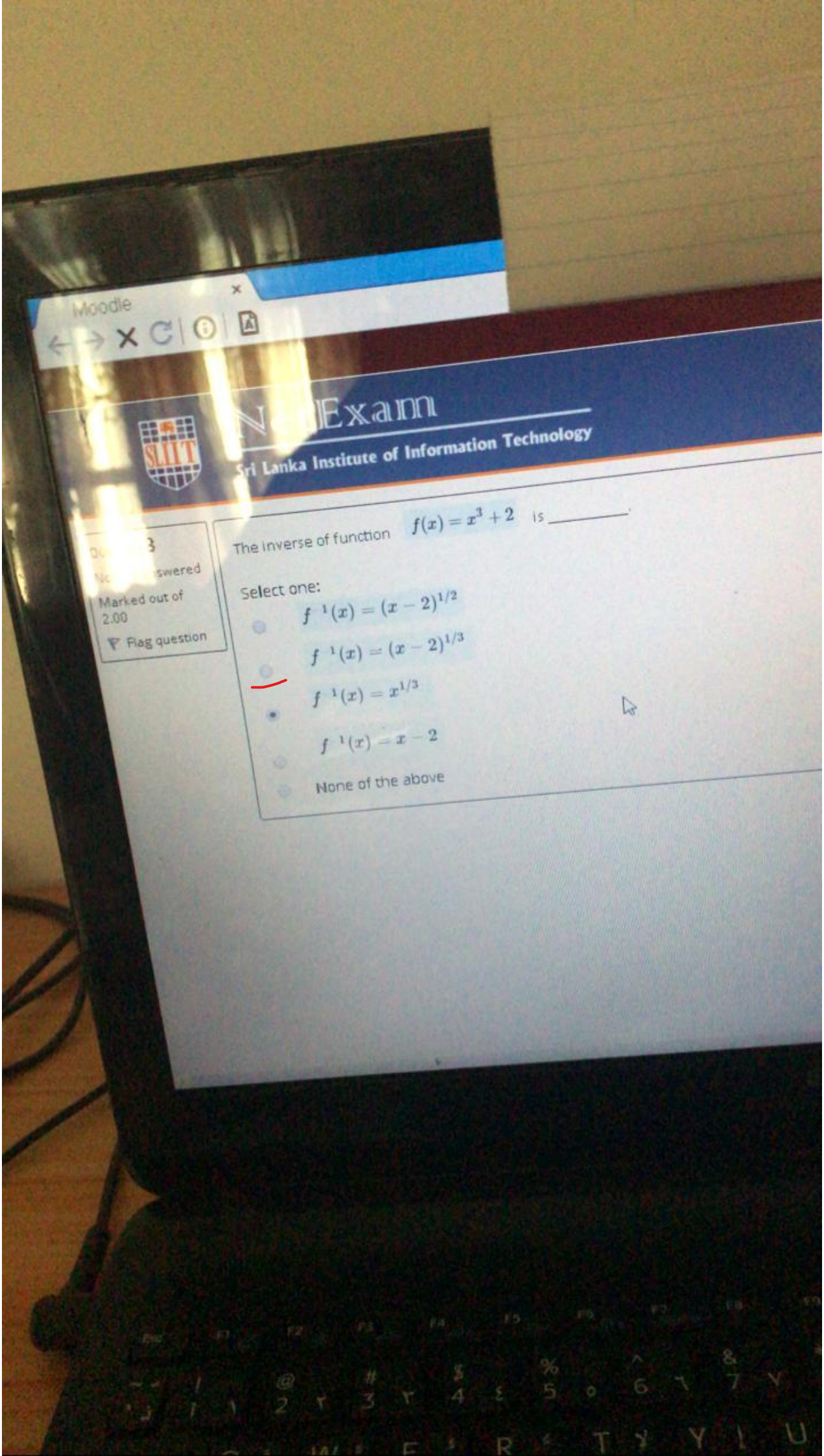
Mary deposits $550 in a savings account at 3% simple annual interest. The value of this account, v is given by the function $v = 550 + 16.5t$, in which t s the number of years the money is in the bank. What is the range of this function?

Select one:

- $0 \leq v \leq 550$
- $v \geq 550$
- $v \leq 550$
- $0 \leq v \leq 16.5$
- None of the above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Sri Lanka Institute of Information Technology
Marked out of 2.00
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The inverse of function $f(x) = x^3 + 2$ is _____.
Select one:
$f^{-1}(x) = (x-2)^{1/2}$
$f^{-1}(x) = (x-2)^{1/3}$
$f^{-1}(x) = x^{1/3}$
$f^{-1}(x) = x - 2$
None of the above

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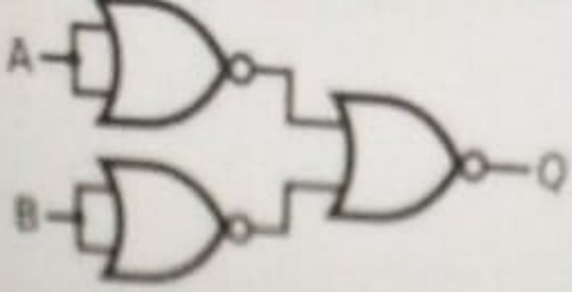
Find the dual of the following expression.

a.1 = (a+b+c+1).a

Select one:

- a = (a.b.c)+a
- a+1 = (a.b.c.1)+a
- a+0 = (a.b.c.0)+a
- a+0 = (a.b.c.1)+a
- None of the above



AND

NetExam

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Mary deposits $550 in a savings account at 3% simple annual interest. The value of this account, v is given by the function $v = 550 + 16.5t$, in which t s the number of years the money is in the bank. What is the range of this function?

Select one:

- $0 \leq v \leq 550$
- $v \geq 550$
- $v \leq 550$
- $0 \leq v \leq 16.5$
- None of the above

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13

Assume that you have to design a circuit for a light fixture controlled by two switches, where flipping one turns the light on when it is off and turns it off when it is on. Select the answer which gives the boolean e above circuit.

Select one:

- $X\bar{Y} + \bar{X}.Y$
- $\overline{XY} + X.Y$
- $\overline{X\bar{Y}} + \bar{X}.Y$
- None of the above

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Question 3

Not yet answered

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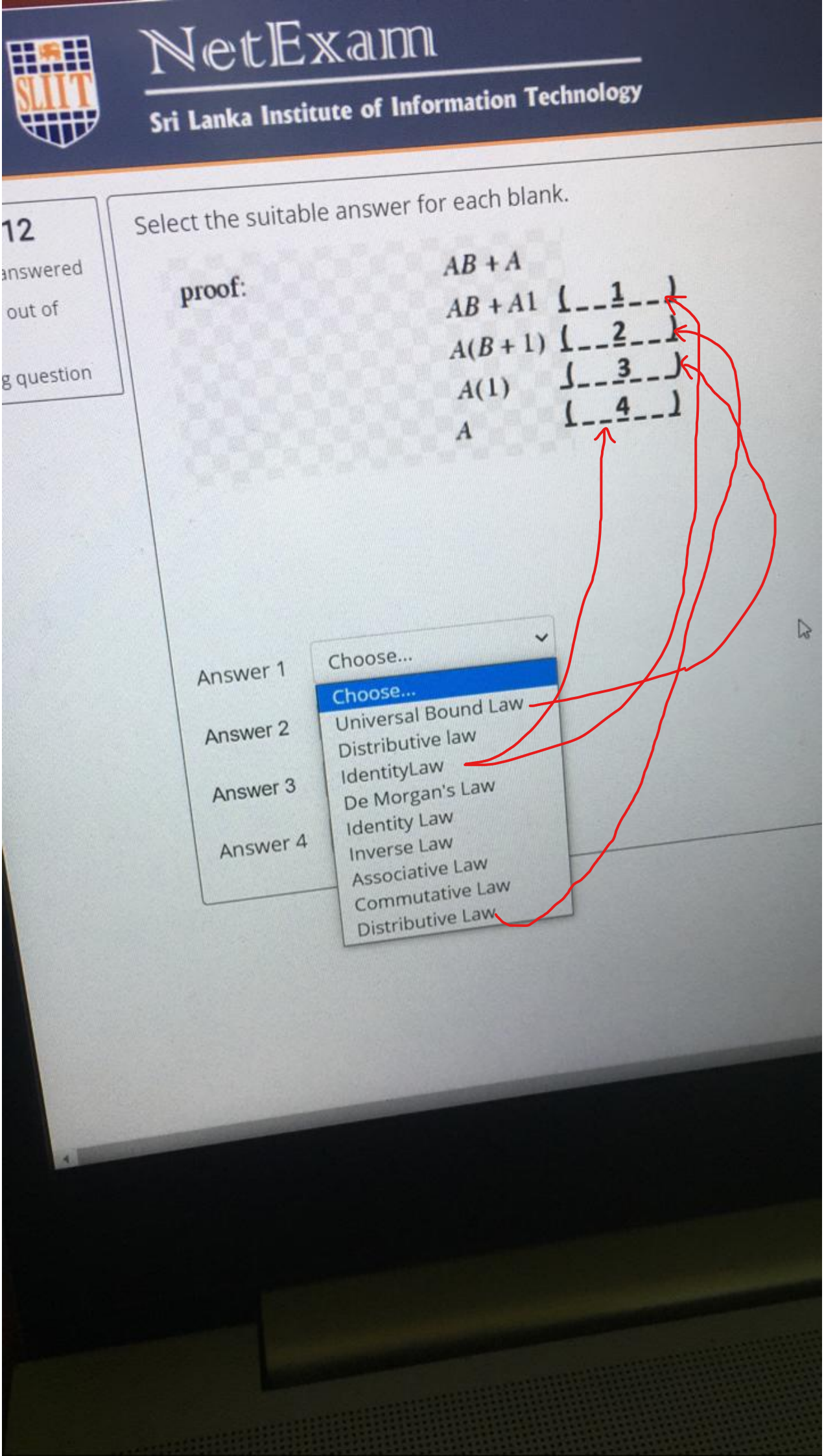
Flag question

$f(x) = 2(24 - 5x)^{1/2}$ is a function that is defined for $x \leq 24/5$. Find the inverse function.

Select one:

- $f^{-1}(x) = 24/5 - x^2/20$
- $f^{-1}(x) = 5/2 + x/4$
- $f^{-1}(x) = 24/5 + x^2/20$
- $f^{-1}(x) = 12 - x^2/20$
- None of the above

Next page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g question
Select the suitable answer for each blank.
proof:
AB + A
AB + A1 (1)
A(B + 1) (2)
A(1) (3)
A (4)
Answer 1
Answer 2
Answer 3
Answer 4
Choose...
Choose...
Universal Bound Law
Distributive law
IdentityLaw
De Morgan's Law
Identity Law
Inverse Law
Associative Law
Commutative Law
Distributive Law

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Differentiate, with respect to x,

f(x)= $(2x-1)^4+(x^2-2)^2$

Select one:

- $68x^3-96x^2+36x-8$
- $68x^3-288x^2+424x-216$
- $68x^3-192x^2+184x-64$
- $68x^3-96x^2+40x-8$
- None of the above

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Flag question

Find the value of the following definite integral.

$$\int_0^2 12x(x+1)(2-x)\,dx$$

Select one:

- 64
- 32
- 30
- 28
- None of the above

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Find.

$$\int (x^3 - 5x + 8)\, dx$$

Select one:

- $\frac{x(x^3 - 10x + 20)}{4} + C$
- $\frac{x(x^3 - 10x + 24)}{4} + C$
- $\frac{x(x^3 - 10x + 32)}{4} + C$
- $\frac{x(x^3 - 10x - 12)}{4} + C$
- None of the above

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Simplify.

$$\int_{-2}^{-1} |2x+3| \, dx$$

Select one:

- 1
- 2
- 0.5
- -1
- -0.5

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Select the suitable answer for each blank.

Proof: $a(a + b)$

$= (a+0)(a + b)$ (1)

$= a+0 \cdot b$ (2) Absorption

) (3)

(4)

Choose...
IdentityLaw
Identity Law
Commutative Law
Associative Law
Universal Bound Law
Inverse Law
Distributive Law
De Morgan's Law
Distributive law

Answer 1 Choose...

Answer 2 Choose...

Answer 3 Choose...

Answer 4 Choose...

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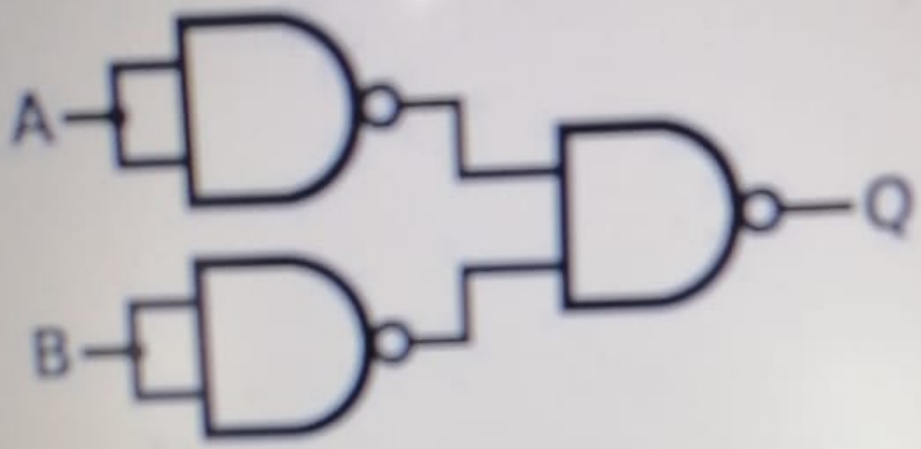
Simplify.

$$\int_{-2}^{1} |3x + 5| \, dx$$

Select one:

- 32/3
- 65/6
- 11
- -11
- None of the above

Following circuit is equivalent to.



Select one:

- OR Gate
- NOR Gate
- NAND Gate
- NOT Gate
- None of the above

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tion

Find the dual of the following expression.

(a + 0).(b + 1) = a

Select one:

- (a.1)+(b.0)=a
- (a.1)(b.0)=a
- (a.1)+(b.1)=a
- (a.1)+(b.0)=b
- None of the above

$$\frac{\mathrm{d}}{\mathrm{d}x}\left[\frac{x^2-5}{2x+1}\right]$$

Select one:

- $\frac{2\left(x^2+x+5\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x-5\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x+6\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x+11\right)}{(2x+1)^2}$
- None of the above

Simplify the following boolean expression.

$$(A+B)(\overline{A}+C)(B+C)$$

Select one:

- $(A+B)(\bar{A}+C)$
- $(\bar{A}+\bar{B})(A+C)$
- $(\bar{A}+B)(A+C)$
- $(\bar{A}+\bar{C})(A+B)$
- None of the above

$AB + AC + BB + BC(\bar{A}+C)$

$AB + AC + B + BC(\bar{A}+C)$

$AB + AC + B(1+C)(\bar{A}+C)$

$AB + AC + B(\bar{A}+C)$

$B(1+A) + AC(\bar{A}+C)$

$(B+AC)(\bar{A}+C)$

$B\bar{A} + BC + AC\bar{A} + ACC$

$B\bar{A} + BC + 0 + AC$

$B\bar{A} + BC + A\bar{A} + AC$

$B(\bar{A}+C) + A(\bar{A}+C)$

$(B+A)(\bar{A}+C)$

Find the value of the following defin

$$\int_{-2}^{-1} (s^2 + 2s + 2)ds$$

Select one:

- 3/4
- 4/3
- 1/3
- 2/3
- None of the above

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Select the Correct Answer.

A variant of Universal Bound Low is, Choose...

A Variant of Identity Low is, Choose...

A Variant of Idempotent Low is, Choose...

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Select the suitable answer for each blank.

Q = (A + B).(A + C)

A.A + A.C + A.B + B.C – Distributive law

A + A.C + A.B + B.C – (1) Idempotent

A(1 + C) + A.B + B.C – Distributive law

A.1 + A.B + B.C – (2) Null

A(1 + B) + B.C – Distributive law

A.1 + B.C – (3) Null

Q = A + (B.C) – (4) Identity

Answer 1 Choose...

Answer 2 Choose...

Answer 3 Choose...

Answer 4 Choose...

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Question 11

Not yet answered

Marked out of 1.00

Flag question

Find the dual of the following expression.

a.b.c.0 = (a+b+1).0

Select one:

- a+b+c+1 = 1
- a+b+c+0 = (a.b.1)+1
- a+b+c+1 = (a.b.1)+1
- a+b+c+0 = (a.b.1)+0
- None of the above

Moodle

NetExamn

Sri Lanka Institute of Information Technology

Question 10

Not yet answered

Marked out of 3.00

Flag question

Select the Correct Answer.

A variant of Universal Bound Low is, Choose...

A Variant of Identity Low is,

A Variant of Idempotent Low is,

Choose...
B + 1 = 0
C + 0 = C
A. 1 = 0
B + 1 = 1
A . A = A
A + 0 = 1

NetExam

Sri Lanka Institute of Information Technology

Question 13

Not yet answered

Marked out of 1.00

Flag question

Assume that you have to design a circuit for a light fixture controlled by three switches, where flipping one of the switches turns the light on when it is off and turns it off when it is on. Select the answer which gives the boolean expression for the above circuit.

Select one:

- $X\bar{Y}Z + X\bar{Y}\bar{Z} + \bar{X}Y\bar{Z} + \bar{X}\bar{Y}Z$
- $XYZ + X\bar{Y}\bar{Z} + \bar{X}Y\bar{Z} + \bar{X}\bar{Y}Z$
- $X\bar{Y}Z + \bar{X}\bar{Y}\bar{Z} + \bar{X}Y\bar{Z} + \bar{X}\bar{Y}Z$
- $\bar{X}YZ + X\bar{Y}\bar{Z} + \bar{X}Y\bar{Z} + \bar{X}\bar{Y}Z$
- None of the above

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Flag question

$f(x) = 2(24 - 5x)^{1/2}$ is a function that is defined for $x \leq 24/5$. Find the inverse function.

Select one:

- $f^{-1}(x) = 24/5 - x^2/20$
- $f^{-1}(x) = 5/2 + x/4$
- $f^{-1}(x) = 24/5 + x^2/20$
- $f^{-1}(x) = 12 - x^2/20$
- None of the above

16 April THURSDAY

6) $\int_0^2 12x(x+1)(2-x)\,dx$

$2dx = 12dx^3 - 12dx^2 + 24dx^2$

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

8) $\frac{d}{dx}\left[(\sqrt{x}-3)(x^2+2x)\right]$

$= \frac{5x\sqrt{x}}{2} - 6\sqrt{x} - 6x + 12$

9) $\frac{d}{dx}\left[\frac{x^2-7}{2x+1}\right]$

$= \frac{2x^2+2x+14}{(2x+1)^2} = \frac{2(x^2+$

10) $\frac{d}{dx}\left(\frac{x^2-5}{2x+1}\right)$

$\frac{2(x^2+2x+5)}{(2x+1)^2}$

13

nswered

out of

question

Assume that you have to design a circuit f
Select the answer which gives the boolean

Select one:

- $XY + \bar{X}.\bar{Y}$
- $X\bar{Y} + \bar{X}.Y$
- $\overline{XY} + X.Y$
- $\overline{X\bar{Y}} + \bar{X}.Y$
- None of the above

Simplify,

$$\frac{\mathrm{d}}{\mathrm{d}x}\left[(2x-3)^4+(x^2-3)^2\right]$$

Select one:

- $68x^3-288x^2+420x-216$
- $68x^3-288x^2+416x-216$

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Find the dual of the following expression.

$(a + 0).(b + 1) = a$

Select one:

- (a.1)+(b.0)=a
- (a.1)(b.0)=a
- (a.1)+(b.1)=a
- (a.1)+(b.0)=b
- None of the above

NetExam

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Differentiate the following function with respect to x,

$$(\sqrt{x}-3)\,(x^2-3x)$$

Select one:

- $\sqrt{x}\,(5x-9)-6x+9$
- $\dfrac{\sqrt{x}\,(5x-9)-16x+24}{2}$
- $\dfrac{\sqrt{x}\,(5x-6)-16x+16}{2}$
- $\dfrac{\sqrt{x}\,(5x-9)-12x+18}{2}$
- None of the above

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Question 6

Not yet answered

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Flag question

Find,

$$\frac{d}{dx}\left[\left(2\sqrt{x}-3\right)\left(x^2-4x\right)\right]$$

Select one:

- $\sqrt{x}\,(5x-12)-6x+12$
- $\sqrt{x}\,(5x-9)-6x+9$
- $\frac{\sqrt{x}\,(5x-15)-12x+30}{2}$
- $\frac{\sqrt{x}\,(5x-3)-16x+8}{2}$
- None of the above

NetExamn

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11

answered

out of

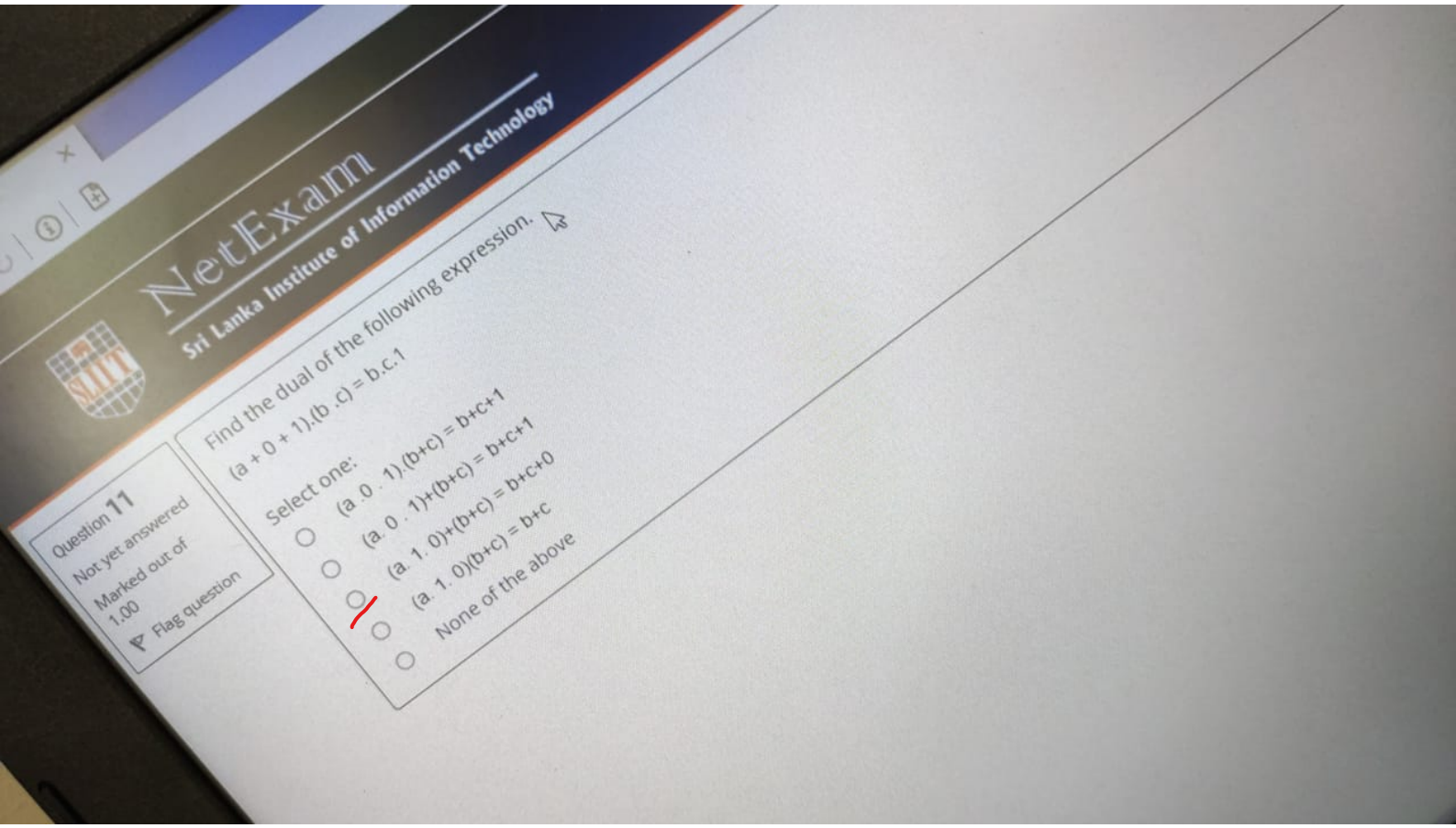
question

Find the dual of the following expression.

(a + 0).(b + 1) = a

Select one:

- (a.1)+(b.0)=a
- (a.1)(b.0)=a
- (a.1)+(b.1)=a
- (a.1)+(b.0)=b
- None of the above


NetExam
Sri Lanka Institute of Information Technology
Question 11
Not yet answered
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Flag question
Find the dual of the following expression.
(a + 0 + 1).(b .c) = b.c.1
Select one:
(a. 0 . 1).(b+c) = b+c+1
(a. 0 . 1)+(b+c) = b+c+1
(a. 1. 0)+(b+c) = b+c+0
(a. 1. 0)(b+c) = b+c
None of the above

Mary deposits $550 in a savings account at 3% simple annual interest. The value of this account, *v* is given by the function $v = 550 + 16.5t$, in which *t* s the number of years the money is in the bank. What is the range of this function?

Select one:

- $0 \leq v \leq 550$
- $v \geq 550$
- $v \leq 550$
- $0 \leq v \leq 16.5$
- None of the above

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NetExam

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Flag question

Differentiate with respect to x,

$$-12x^2 + x^{\frac{3}{2}} - 3$$

Select one:

- $\frac{1}{2\sqrt{x}} - 24x$
- $-24x + \frac{3\sqrt{x}}{2} - 3$
- $24x + \frac{3\sqrt{x}}{2}$
- $\frac{3\sqrt{x}}{2} - 24x$

None of the above

Differentiate the following function with respect to x.

$$(\sqrt{x}-3)(x^2-3x)$$

Select one:

- $\sqrt{x}(5x-9)-6x+9$
- $\frac{\sqrt{x}(5x-9)-16x+24}{2}$
- $\frac{\sqrt{x}(5x-6)-16x+16}{2}$
- $\frac{\sqrt{x}(5x-9)-12x+18}{2}$
- None of the above

A function is said to be _____, if and only if $f(a) = f(b)$ implies that $a = b$ for all a and b in the domain of f.

Select one:

- one-to-one
- one-to-many
- many-to-many
- many-to-one
- None of the above

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Differentiate with respect to t.

$$24t^2 + \frac{1}{t^{\frac{3}{2}}} - 3$$

Select one:

- $24t - \frac{3}{2t^{\frac{5}{2}}}$
- $48t - \frac{3}{2t^{\frac{5}{2}}} - 3$
- $48t - \frac{3}{2t^{\frac{5}{2}}}$
- $48t + \frac{3\sqrt{t}}{2} - 3$
- None of the above

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nd the answer for the following binary division.

elect one:

- Quotient = 10110001 & Remainder = 01
- Quotient = 01010101 & Remainder = 01
- Quotient = 01010001 & Remainder = 00
- Quotient = 10110000 & Remainder = 10
- None of the above.

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Find the dual of the following expression.

a.1 = (a+b+c+1).a

Select one:

- a = (a.b.c)+a
- a+1 = (a.b.c.1)+a
- a+0 = (a.b.c.0)+a
- a+0 = (a.b.c.1)+a
- None of the above

NetExam

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Differentiate the following function with respect to x,

$$(\sqrt{x}-3)\,(x^2-3x)$$

Select one:

- $\sqrt{x}\,(5x-9)-6x+9$
- $\dfrac{\sqrt{x}\,(5x-9)-16x+24}{2}$
- $\dfrac{\sqrt{x}\,(5x-6)-16x+16}{2}$
- $\dfrac{\sqrt{x}\,(5x-9)-12x+18}{2}$
- None of the above

NetExam

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Question 13

Not yet answered

Marked out of 1.00

Flag question

Assume that you have to design a circuit for a light fixture controlled by three switches, where flipping one of the switches turns the light on when it is off and turns it off when it is on. Select the answer which gives the boolean expression for the above circuit.

Select one:

- $X\bar{Y}Z + X\bar{Y}\bar{Z} + \bar{X}YZ + \bar{X}\bar{Y}Z$
- $XYZ + X\bar{Y}\bar{Z} + \bar{X}YZ + \bar{X}\bar{Y}Z$
- $X\bar{Y}Z + \bar{X}\bar{Y}\bar{Z} + \bar{X}YZ + \bar{X}\bar{Y}Z$
- $\bar{X}YZ + X\bar{Y}\bar{Z} + \bar{X}YZ + \bar{X}\bar{Y}Z$
- None of the above

Next page

Differentiate with respect to x,

$$(x^3-1)^2-x^6+\sqrt{x}-$$

Select one:

- $-\dfrac{12x^{\frac{11}{2}}+12x^{\frac{5}{2}}-1}{2\sqrt{x}}$
- $-\dfrac{12x^{\frac{5}{2}}-1}{2\sqrt{x}}$
- $-\dfrac{12x^{\frac{7}{2}}+1}{2x^{\frac{3}{2}}}$
- $-7x^6+6x^2\left(x^3-1\right)-\dfrac{1}{2x^{\frac{3}{2}}}$
- None of the above

NetExam

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Mary deposits $ 450 in a savings account at 2.5% simple annual interest. Th

of this account, v, is given by the function $v = 450 + 12.5t$, , in which t is

of years the money is in the bank. What is the range of this function?

Select one:

- $0 \leq v \leq 450$
- $v \leq 450$
- $v \geq 450$
- $0 \leq v \leq 12.5$
- None of the above

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yet answered
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lag question

Find,

$$\frac{\mathrm{d}}{\mathrm{d}x}\left[\frac{x^2-7}{2x+1}\right]$$

Select one:

- $\frac{2\left(x^2+x+5\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x+6\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x+7\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x+2\right)}{(2x+1)^2}$
- None of the above

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Sri Lanka Institute of Information Technology

Question

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Find,

$$\frac{d}{dx}\left[\frac{x^2-5}{2x+1}\right]$$

Select one:

- $\frac{2(x^2+x+5)}{(2x+1)^2}$
- $\frac{2(x^2+x-5)}{(2x+1)^2}$
- $\frac{2(x^2+x+6)}{(2x+1)^2}$
- $\frac{2(x^2+x+11)}{(2x+1)^2}$
- None of the above

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Select the Correct Answer.

A variant of Idempotent Law is, Choose...

A Variant of Identity Law is,

A Variant of Absorption Law is,

Choose...
B.B = 1
A.(A + C) = A
A . 1 = A
(A + A) = A
A + A = 0
A.0 = A

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Question 23

Not yet answered

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Flag question

Simplify the following boolean expression.

$$ABC + \overline{A}\,B + AB\overline{C}$$

Select one:

- A
- B
- AB
- BC
- None of the above

$AB(C + \overline{C}) + \overline{A}B$

$(C + \overline{C}) = 1$

$AB + \overline{A}B$

$B(A + \overline{A})$

$(A + \overline{A}) = 1$

B

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Differentiate the following function with respect to x

$$x^{-2} - 3x + 3$$

Select one:

- $-\frac{2}{x^3} - 3$
- $-\frac{1}{x^3} - 3$
- $-\frac{1}{x^3} - 4$
- $\frac{1}{5x^2}$
- None of the above.

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Convert the number 100111.1101_2 to the equivalent decimal number.

Select one:

- 37.9375
- 39.8125
- 55.3125
- 49.6875
- None of the above.

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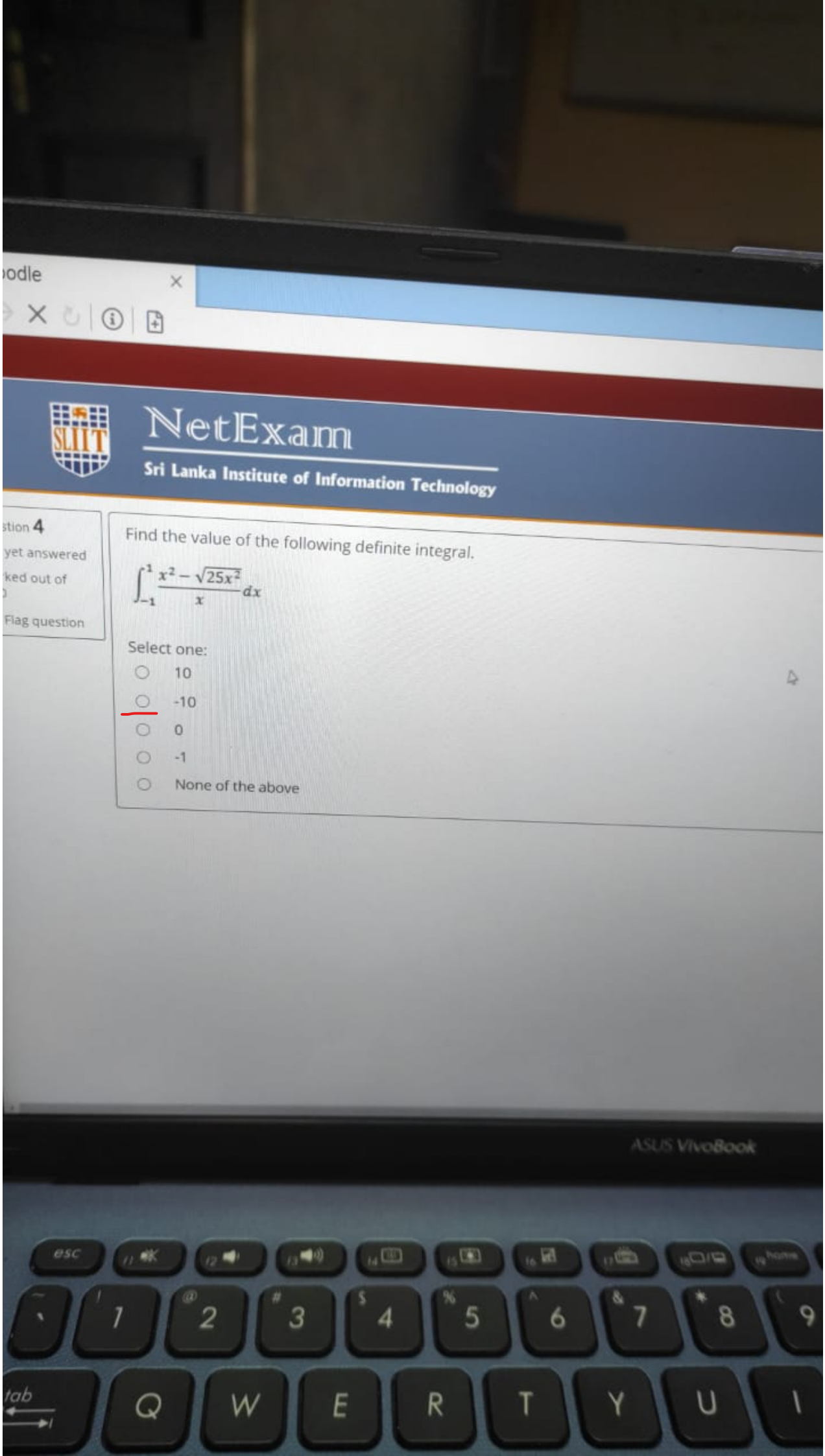
lag question

Find,

$$\frac{\mathrm{d}}{\mathrm{d}x}\left[\frac{x^2-7}{2x+1}\right]$$

Select one:

- $\frac{2\left(x^2+x+5\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x+6\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x+7\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x+2\right)}{(2x+1)^2}$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NetExam
Sri Lanka Institute of Information Technology
stion 4
yet answered
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Flag question
Find the value of the following definite integral.
$\int_{-1}^{1} \frac{x^2 - \sqrt{25x^2}}{x} dx$
Select one:
10
-10
0
-1
None of the above
ASUS VivoBook

NetExamn

Sri Lanka Institute of Information Technology

A committee of three individuals decides issues for an organization. Each individual votes either yes or no for each proposal that arises. A proposal is passed if it receives at least two yes votes. Assume that you design a circuit that determines whether a proposal passes. What is the boolean expression which matches the above circuit.

Select one:

- XY + XZ + YZ
- XYZ + XZ
- XY + XZ
- X.(Y+Z)
- None of the above

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11

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question

Find the dual of the following expression.

a.1 = (a+b+c+1).a

Select one:

- a = (a.b.c)+a
- a+1 = (a.b.c.1)+a
- a+0 = (a.b.c.0)+a
- a+0 = (a.b.c.1)+a
- None of the above

Find,

$$\frac{d}{dx}\left[\left(\sqrt{x}-3\right)\left(x^2-5x\right)\right]$$

Select one:

- $\frac{\sqrt{x}\,(5x-18)-12x+36}{2}$
- $\frac{\sqrt{x}\,(5x-15)-12x+30}{2}$
- $\frac{\sqrt{x}\,(5x-18)-16x+48}{2}$
- $\frac{\sqrt{x}\,(5x-3)-16x+8}{2}$

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NetExam

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Question 2

Not yet answered

Marked out of 1.00

Flag question

Mary deposits $550 in a savings account at 3% simple annual interest. The value of this account, v is given by the function $v = 550 + 16.5t$, in which t s the number of years the money is in the bank. What is the range of this function?

Select one:

- $0 \leq v \leq 550$
- $v \geq 550$
- $v \leq 550$
- $0 \leq v \leq 16.5$
- None of the above

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Question 5

Not yet answered

Marked out of 1.00

Flag question

Differentiate with respect to x.

$$(x^3-1)^2-x^6+\sqrt{x}-1$$

Select one:

- $\frac{-12x^{\frac{11}{3}}+12x^{\frac{5}{3}}-1}{2\sqrt{x}}$
- $\frac{-12x^{\frac{5}{3}}-1}{2\sqrt{x}}$
- $\frac{-12x^{\frac{7}{3}}+1}{2x^{\frac{2}{3}}}$
- $-7x^6+6x^2(x^3-1)-\frac{1}{2x^{\frac{2}{3}}}$
- None of the above

NetExam

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Find the answer for the following binary multiplication.

11100011 × 101

Select one:

- 10001101111
- 11111111001
- 10101100000
- 010010100110
- None of the above.

The inverse of function $f(x) = x^3 + 2$ is _____.

Select one:

- $f^{-1}(x) = (x-2)^{1/2}$
- $f^{-1}(x) = (x-2)^{1/3}$
- $f^{-1}(x) = x^{1/3}$
- $f^{-1}(x) = x - 2$
- None of the above

NetExam

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Assume that you have to design a circuit for a light fixture controlled by three switches, where flipping one of the switches turns the light on when it is off and turns it off when it is on. Select the answer which gives the boolean expression for the above circuit.

Select one:

- $X\bar{Y}Z + X\bar{Y}\bar{Z} + \bar{X}YZ + \bar{X}\bar{Y}Z$
- $XYZ + X\bar{Y}\bar{Z} + \bar{X}YZ + \bar{X}\bar{Y}Z$
- $X\bar{Y}Z + \bar{X}\bar{Y}\bar{Z} + \bar{X}YZ + \bar{X}\bar{Y}Z$
- $\bar{X}YZ + X\bar{Y}\bar{Z} + \bar{X}YZ + \bar{X}\bar{Y}Z$
- None of the above

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estion 10

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Flag question

Select the Correct Answer.

A variant of Associative Law is. Choose...

A Variant of Identity Law is.

A Variant of Distributive Law is.

Choose...
(A + B) + C = A + (B + C)
(A . B) + C = A + (B . C)
A +(B.C) = (A+B) . (A+C)
B + 1 = 0
C + 0 = C
A .(B.C) = (A.B) . (A.C)

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Finish attempt

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Differentiate following function with respect to x

$$\frac{x^2-3}{2x+1}$$

Select one:

- $\frac{2\left(x^2+x+4\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x+3\right)}{(2x+1)^2}$
- $-\frac{2\left(x^2+x+1\right)}{(2x+1)^2}$
- $-\frac{2\left(x^2+x+6\right)}{(2x+1)^2}$
- None of the above

The inverse of function $f(x) = x^3 + 2$ is _____.

Select one:

- $f^{-1}(x) = (x-2)^{1/2}$
- $f^{-1}(x) = (x-2)^{1/3}$
- $f^{-1}(x) = x^{1/3}$
- $f^{-1}(x) = x - 2$
- None of the above

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NetExam

Sri Lanka Institute of Information Technology

Question 11

Not yet answered

Marked out of 1.00

Flag question

Find the dual of the following expression.

a.1 = (a+b+c+1).a

Select one:

- a = (a.b.c)+a
- a+1 = (a.b.c.1)+a
- a+0 = (a.b.c.0)+a
- a+0 = (a.b.c.1)+a
- None of the above

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lag question

Mary deposits $ 450 in a savings account at 2.5% simple annual interest. The value of this account, v, is given by the function $v = 450 + 12.5t$, , in which t is the number of years the money is in the bank. What is the range of this function?

Select one:

- $0 \leq v \leq 450$
- $v \leq 450$
- $v \geq 450$
- $0 \leq v \leq 12.5$
- None of the above

Find,

$$\frac{d}{dx}\left[\frac{x^2-7}{2x+1}\right]$$

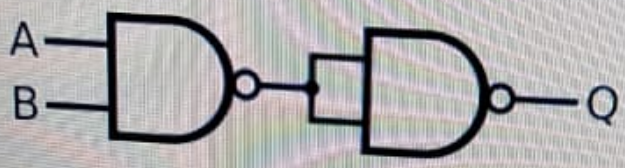
Select one:

- $\frac{2\left(x^2+x+5\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x+6\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x+7\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x+2\right)}{(2x+1)^2}$
- None of the above

NetExam

Sri Lanka Institute of Information Technology

Following circuit is equivalent to;



Select one:

- OR Gate
- AND Gate
- NOR Gate
- NAND Gate
- None of the above

NetExam

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12
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question

Select the suitable answer for each blank.

$$A + \overline{A}\,B = A\,1 + \overline{A}\,B$$
$$= A\,(1 + B) + \overline{A}\,B \quad [\_\_1\_\_]$$
$$= A + A\,B + \overline{A}\,B \quad [\_\_2\_\_]$$
$$= A + B\,(A + \overline{A}) \quad [\_\_3\_\_]$$
$$= A + B \quad [\_\_4\_\_]$$

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inverse

Answer 1 Choose...

Answer 2 Choose...

Answer 3 Choose...

Answer 4 Choose...

Question 1

Not yet answered

Marked out of 2.00

Flag question

Find the value of the following definite integral.

$$\int_0^3 |3t - 5|\, dt$$

Select one:

- 20
- 30/6
- 41/6
- 42/6
- None of the above

Question 9

Not yet answered

Marked out of 1.00

Flag question

Find,

$$\int \left(x^3 - 5x + 8\right) \mathrm{d}x$$

Select one:

- $\frac{x\left(x^3 - 10x + 20\right)}{4} + C$
- $\frac{x\left(x^3 - 10x + 24\right)}{4} + C$
- $\frac{x\left(x^3 - 10x + 32\right)}{4} + C$
- $\frac{x\left(x^3 - 10x - 12\right)}{4} + C$
- None of the above

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Lanka Institute of Information Technology

ify.

$$\frac{d}{dx}\left[(2x-3)^4+(x^2+2)^2\right]$$

ct one:

$68x^3-288x^2+424x-216$

$68x^3-288x^2+440x-216$

$68x^3-192x^2+184x-64$

$80x^3-192x^2+176x-64$

None of the above

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Find the dual of the following expression.

a.1 = (a+b+c+1).a

Select one:

- a = (a.b.c)+a
- a+1 = (a.b.c.1)+a
- a+0 = (a.b.c.0)+a
- a+0 = (a.b.c.1)+a
- None of the above

NetExam

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Convert the number 168_{10} to a base 3 number system.

Select one:

- 22001
- 11111
- 10002
- 20020
- None of the above.

$$
\begin{array}{r|l}
3 & 168 \\
3 & 56 - 0 \\
3 & 18 - 2 \\
3 & 6 - 0 \\
 & 2 - 0
\end{array}
$$

tion 3
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Flag question

The inverse of function $f(x) = x^3 + 2$ is _____.

Select one:

- $f^{-1}(x) = (x-2)^{1/2}$
- $f^{-1}(x) = (x-2)^{1/3}$
- $f^{-1}(x) = x^{1/3}$
- $f^{-1}(x) = x - 2$
- None of the above

2
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question

Mary deposits $ 450 in a savings account at 2.5% simple annual interest. The value of this account, v, is given by the function $v = 450 + 12.5t$, in which t is the number of years the money is in the bank. What is the range of this function?

Select one:

- $0 \leq v \leq 450$
- $v \leq 450$
- $v \geq 450$
- $0 \leq v \leq 12.5$
- None of the above

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Question 11

Not yet answered

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Flag question

Find the dual of the following expression.

a.b.c.0 = (a+b+1).0

Select one:

- a+b+c+1 = 1
- a+b+c+0 = (a.b.1)+1
- a+b+c+1 = (a.b.1)+1
- a+b+c+0 = (a.b.1)+0
- None of the above

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Find the dual of the following expression.

$(a + 0).(b + 1) = a$

Select one:

- (a.1)+(b.0)=a
- (a.1)(b.0)=a
- (a.1)+(b.1)=a
- (a.1)+(b.0)=b
- None of the above

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Select the suitable answer for each blank.

$$A + \overline{A}\,B = A\,1 + \overline{A}\,B$$

$$= A\,(1 + B) + \overline{A}\,B \quad [\_\_1\_\_]$$

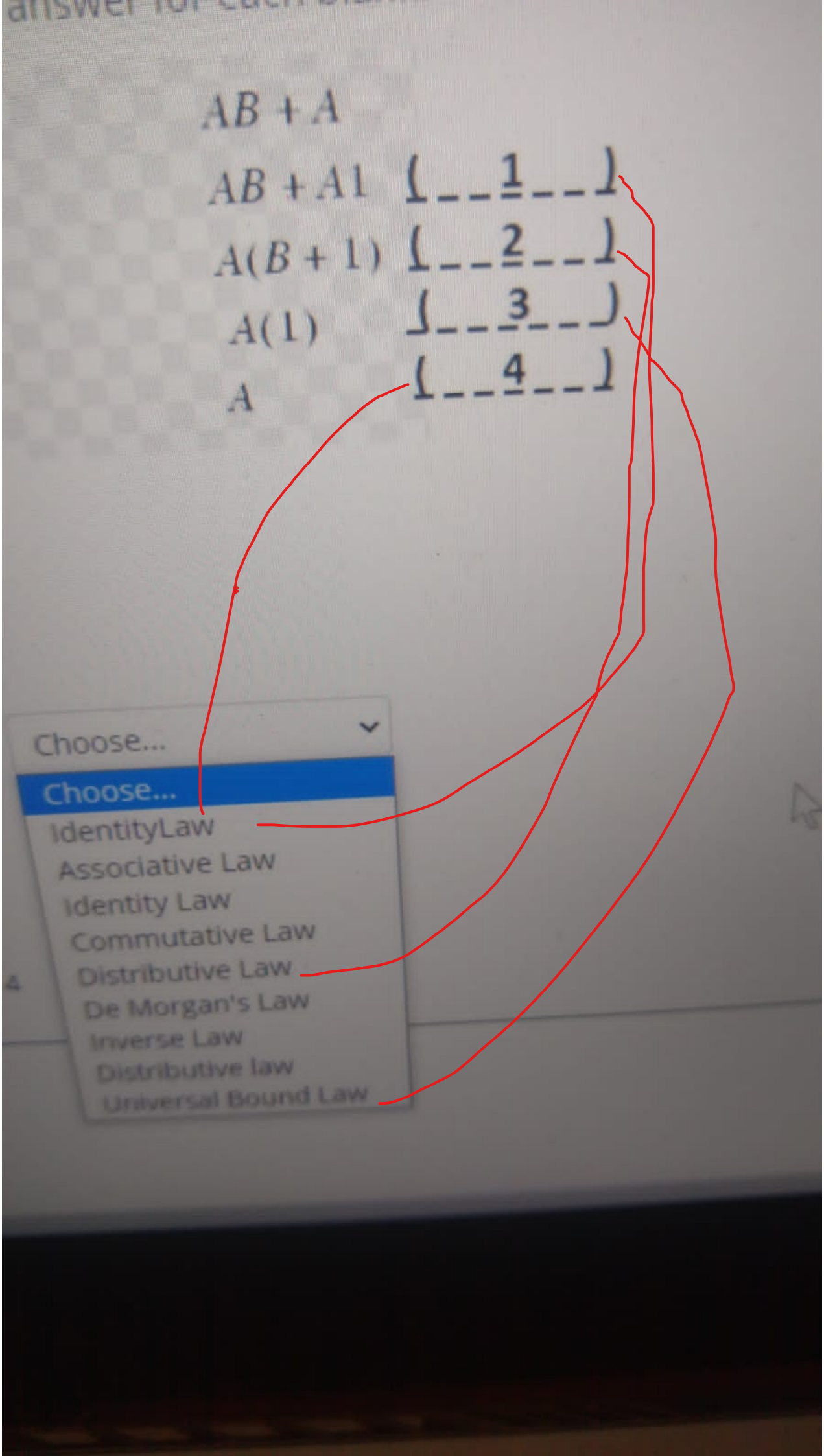
$$= A + A\,B + \overline{A}\,B \quad [\_\_2\_\_]$$

$$[\_\_3\_\_]$$

$$[\_\_4\_\_]$$

Choose...
Inverse Law
Associative Law
Commutative Law
Universal Bound Law
Absorption Law
De Morgan's Law
Double Complement law
Distributive Law

Answer 1
Answer 2
Answer 3
Answer 4 Choose...


$AB + A$
$AB + A1$ (__1__)
$A(B + 1)$ (__2__)
$A(1)$ (__3__)
A (__4__)
Choose...
Choose...
IdentityLaw
Associative Law
Identity Law
Commutative Law
Distributive Law
De Morgan's Law
Inverse Law
Distributive law
Universal Bound Law

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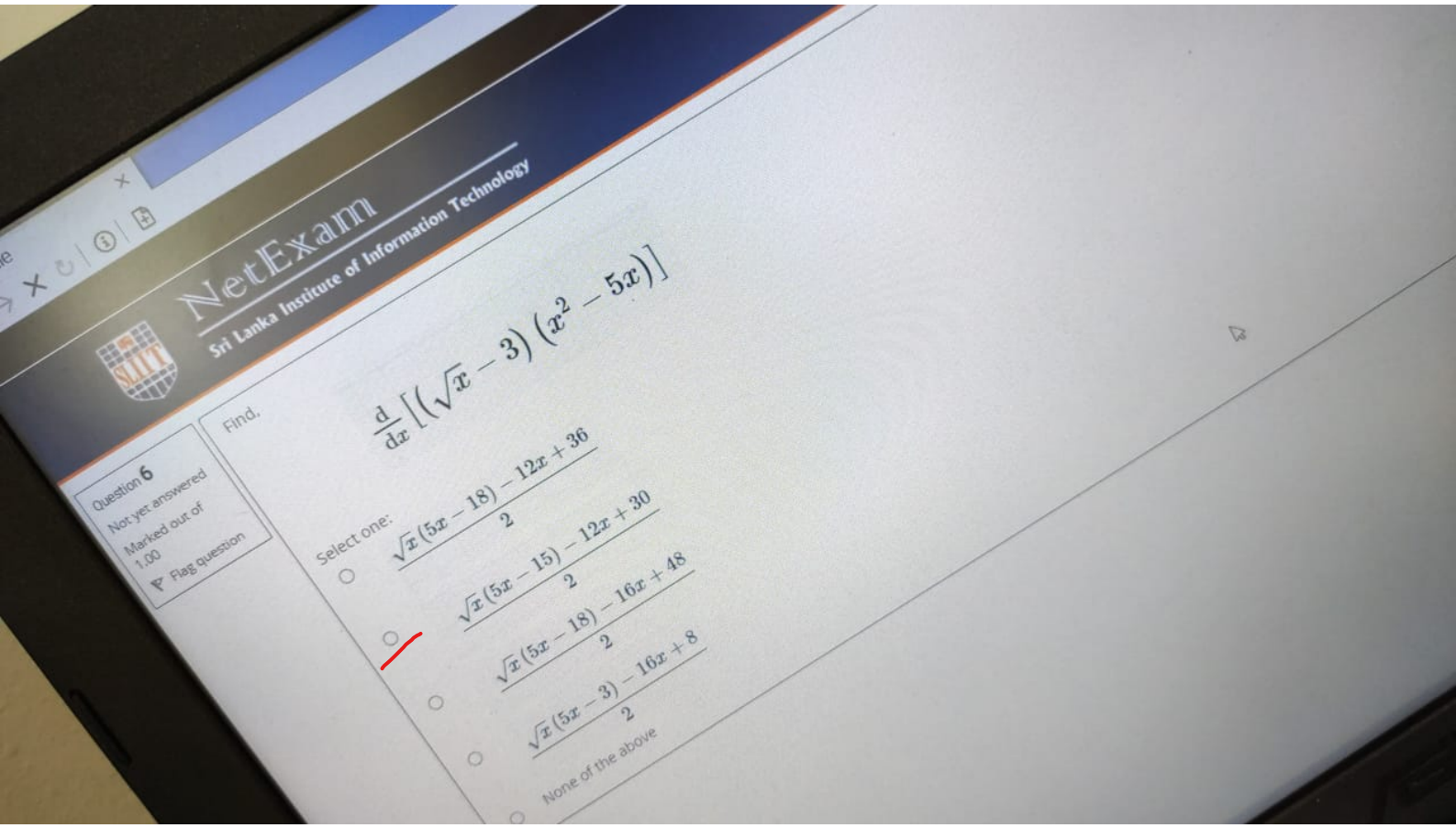
Select the Correct Answer.

A variant of Associative Law is, Choose...

A Variant of Identity Law is,

A Variant of Distributive Law is,

Choose...
C + 0 = C
A .(B.C) = (A.B) . (A.C)
A +(B.C) = (A+B) . (A+C)
B + 1 = 0
(A + B) + C = A + (B + C)
(A . B) + C = A + (B . C)


NetExam
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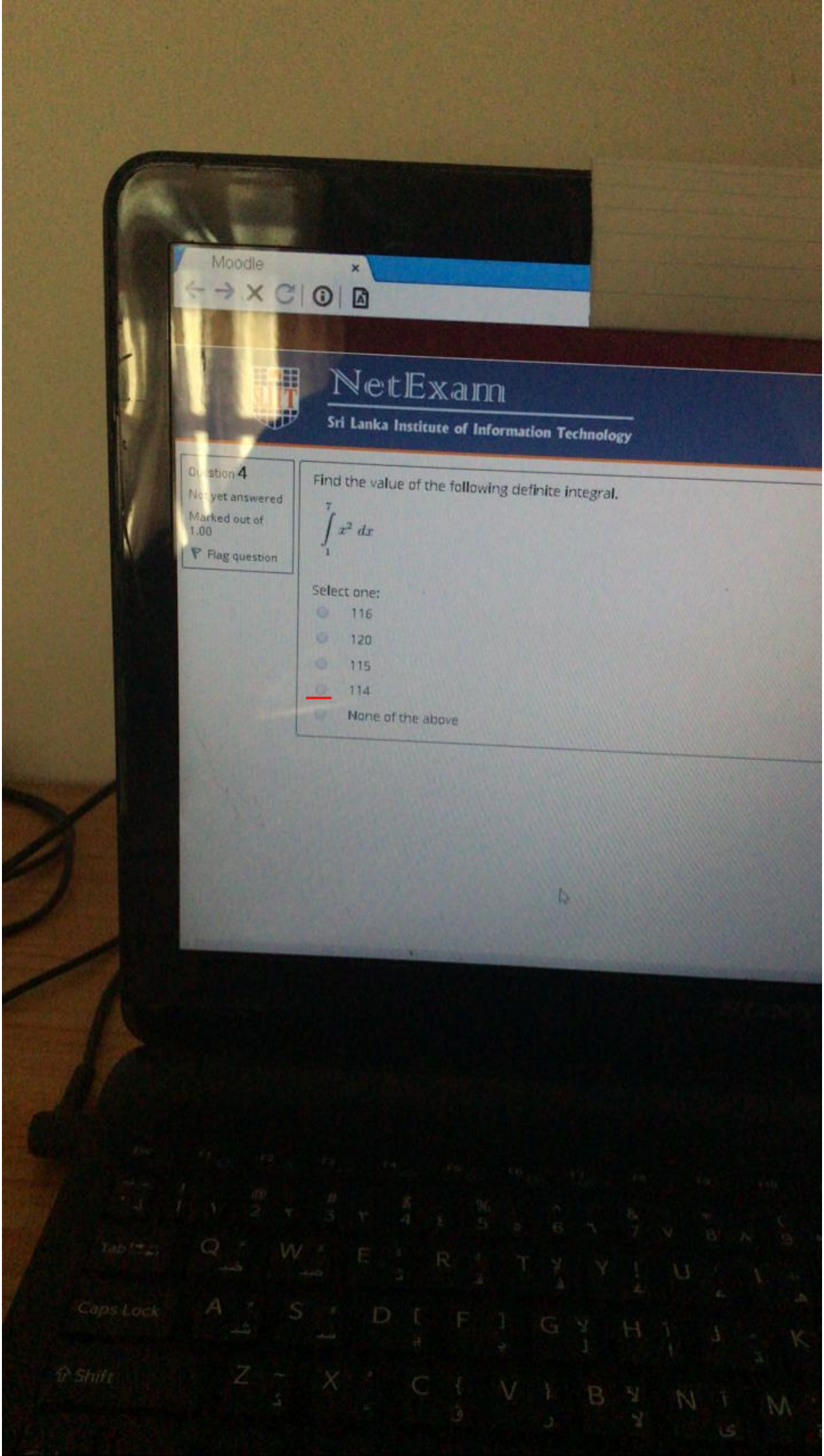
Question 6
Not yet answered
Marked out of 1.00
Flag question
Find,
$\frac{d}{dx}\left[\left(\sqrt{x}-3\right)\left(x^2-5x\right)\right]$
Select one:
$\frac{\sqrt{x}(5x-18)-12x+36}{2}$
$\frac{\sqrt{x}(5x-15)-12x+30}{2}$
$\frac{\sqrt{x}(5x-18)-16x+48}{2}$
$\frac{\sqrt{x}(5x-3)-16x+8}{2}$
None of the above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NetExam
Sri Lanka Institute of Information Technology
Question 4
Not yet answered
Marked out of 1.00
Flag question
Find the value of the following definite integral.
$\int_1^7 x^2\,dx$
Select one:
116
120
115
114
None of the above

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Find,

$$\frac{\mathrm{d}}{\mathrm{d}x}\left[\frac{x^2-9}{2x+1}\right]$$

Select one:

- $\frac{2\left(x^2+x+9\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x+7\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x+6\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x+11\right)}{(2x+1)^2}$
- None of the above

Question 2
Not yet answered
Marked out of 1.00
Flag question

Mary deposits $550 in a savings account at 3% simple annual interest. The value of this account, *v* is given by the function $v = 550 + 16.5t$, in which *t* s the number of years the money is in the bank. What is the range of this function?

Select one:

- $0 \leq v \leq 550$
- $v \geq 550$
- $v \leq 550$
- $0 \leq v \leq 16.5$
- None of the above

Find the value of the following definite integral.

$$\int_0^1 |2x - 12| dx$$

Select one:

- 12
- 11
- 13
- -12
- None of the above

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Find the value of the following definite integral.

$$\int_0^2 12x(x+1)(2-x)\,dx$$

Select one:

- 64
- 32
- 30
- 28
- None of the above

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Question 6

Not yet answered

Marked out of 1.00

Flag question

Differentiate,

$$\frac{\mathrm{d}}{\mathrm{d}x}\left[\left(\sqrt{x}-3\right)\left(x^2-4x\right)\right]$$

Select one:

- $\frac{\sqrt{x}\,(5x-12)-12x+24}{2}$
- $\frac{\sqrt{x}\,(5x-9)-12x+18}{2}$
- $\frac{\sqrt{x}\,(5x-6)-16x+16}{2}$
- $\sqrt{x}\,(5x-9)-6x+9$
- None of the above

Quiz navig

Finish attempt

Time left 0:43:39

1 2 3

9 10 11

17 18 19

Next page

Question 4

Not yet answered

Marked out of 1.00

Flag question

Simplify.

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

Select one:

- -60
- -58
- -50
- 58
- 65

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Find the answer for the following binary division.

10101010 ÷ 10

Select one:

- Quotient = 1011000 & Remainder = 00
- Quotient = 01010101 & Remainder = 01
- Quotient = 01010101 & Remainder = 00
- Quotient = 1011000 & Remainder = 10
- None of the above.

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Differentiate the following function with respect to x

$$x^{-2} - 3x + 3$$

Select one:

- $-\frac{2}{x^3} - 3$
- $-\frac{1}{x^3} - 3$
- $-\frac{1}{x^3} - 4$
- $\frac{1}{5x^2}$
- None of the above.

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Question 9

Not yet answered

Marked out of 1.00

Flag question

Simplify

$$\int x^3 - 2x + 5 \, dx$$

Select one:

- $\frac{x\left(x^3 - 4x + 20\right)}{4} + C$
- $\frac{x^4}{4} + x^2 + 5x + C$
- $\frac{x\left(x^3 - 4x + 12\right)}{4} + C$
- $\frac{x\left(x^3 - 4x - 8\right)}{4} + C$
- None of the above

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Find the answer for the following binary addition.

10101010 + 11001100

Select one:

- 0101110110
- 01000100
- 1101110100
- 1011110101
- None of the above.

Simplify,

$$\frac{\mathrm{d}}{\mathrm{d}x}\left[(2x-3)^4+\left(x^2+2\right)^2\right]$$

Select one:

- $68x^3-288x^2+424x-216$
- $68x^3-288x^2+440x-216$
- $68x^3-192x^2+184x-64$
- $80x^3-192x^2+176x-64$
- None of the above

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Flag question

Differentiate the following function with respect to t.

$$5t^3 + \frac{1}{t^{\frac{5}{2}}} - 3$$

Select one:

- $15t^2 - \frac{5}{2t^{\frac{7}{2}}}$
- $15t^2 + \frac{5t^{\frac{3}{2}}}{2}$
- $15t^2 - \frac{5}{2t^{\frac{5}{2}}} - 3$
- $15t^2 - \frac{5}{2t^{\frac{7}{2}}}$
- None of the above

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Question 3

Not yet answered

Marked out of 2.00

Flag question

$f(x) = 2(24 - 5x)^{1/2}$ is a function that is defined for $x \leq 24/5$. Find the inverse function.

Select one:

- $f^{-1}(x) = 24/5 - x^2/20$
- $f^{-1}(x) = 5/2 + x/4$
- $f^{-1}(x) = 24/5 + x^2/20$
- $f^{-1}(x) = 12 - x^2/20$
- None of the above

Next page

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ag question

Convert the number 168_{10} to a base 5 number system.

Select one:

- 2200
- 4412
- 1133
- 2002
- None of the above.

5 | 168
5 | 33 – 3
5 | 6 – 3
1 – 1

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Question 17

Not yet answered

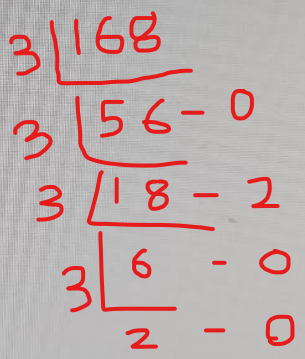
Marked out of .00

Flag question

Convert the number 168_{10} to a base 3 number system.

Select one:

- 22001
- 11111
- 10002
- 20020
- None of the above.



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Question 4

Not yet answered

Marked out of 1.00

Flag question

Find the value of the following definite integral.

$$\int_{1}^{7} x^2 \, dx$$

Select one:

- 116
- 120
- 115
- 114
- None of the above

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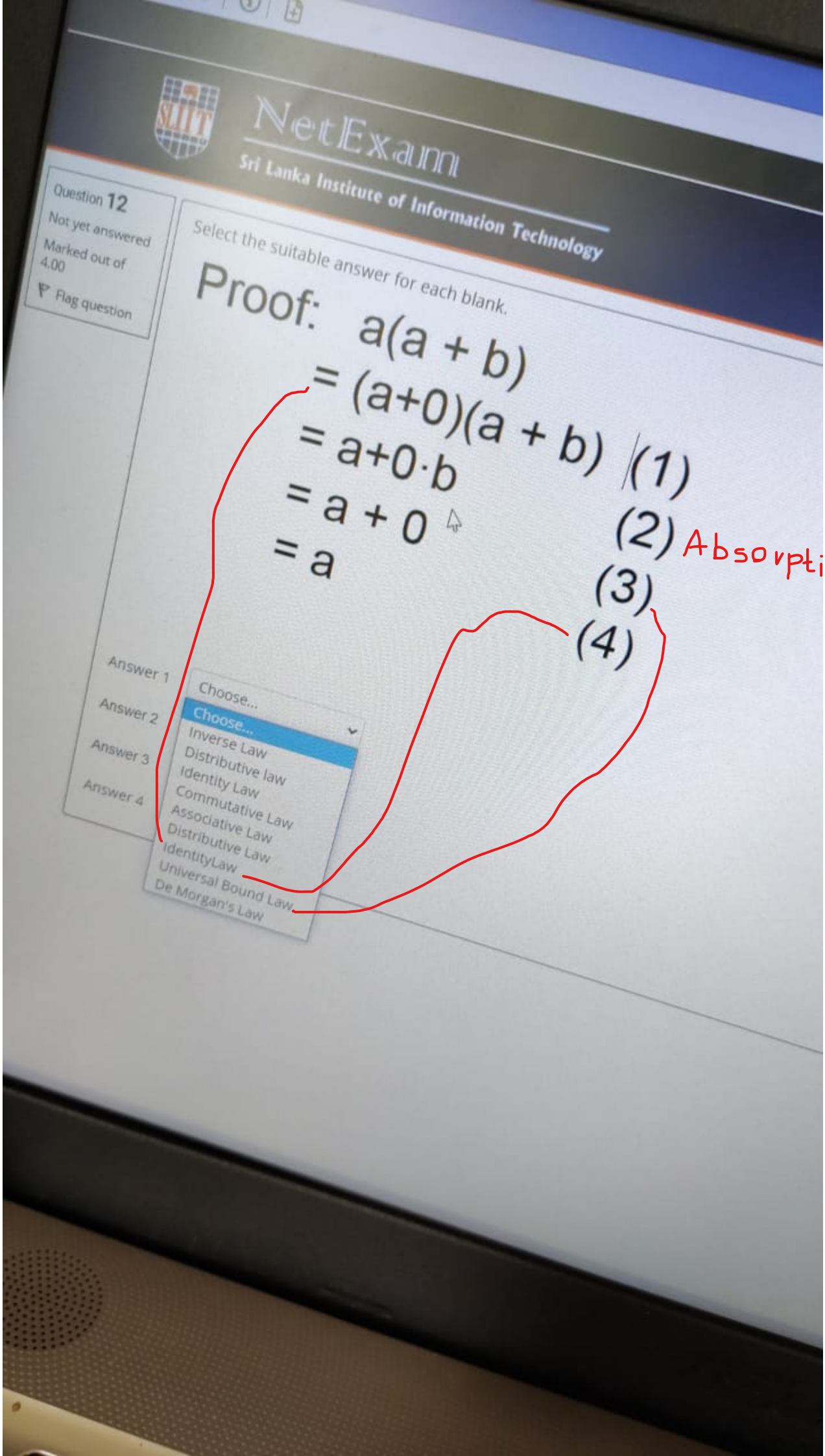
Convert the number 1999_{10} to equivalent binary numbers.

Select one:

- 10000101000
- 1111100111
- 10001001000
- 11111001111
- None of the above.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Question 12
Not yet answered
Marked out of 4.00
Flag question
Select the suitable answer for each blank.
Proof: a(a + b)
= (a+0)(a + b) (1)
= a+0·b (2)
= a + 0 (3)
= a (4)
Absorption
Answer 1
Answer 2
Answer 3
Answer 4
Choose...
Choose...
Inverse Law
Distributive law
Identity Law
Commutative Law
Associative Law
Distributive Law
IdentityLaw
Universal Bound Law
De Morgan's Law

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Select the suitable answer for each blank.

proof:

$AB + A$

$AB + A1$ [1]

$A(B + 1)$ [2]

$A(1)$ [3]

A [4]

Answer 1 Choose...

Answer 2

Answer 3

Answer 4

Choose...
Universal Bound Law
Distributive law
IdentityLaw
De Morgan's Law
Identity Law
Inverse Law
Associative Law
Commutative Law
Distributive Law

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Question 23

Not yet answered

Marked out of 1.00

Flag question

Simplify the following boolean expression.

$$\overline{A}\,B\overline{C} + A\,\overline{B}\,\overline{C} + \overline{A}\,\overline{B}\,\overline{C} + \overline{A}\,\overline{B}\,\overline{C}$$

Select one:

- $\bar{A}\bar{B}\bar{C}$
- $\bar{B}\bar{C}$
- $(\bar{A}+\bar{B})\bar{C}$
- $(A+\bar{B})\bar{C}$
- None of the above

$\bar{A}B\bar{C} + \bar{B}\bar{C}(A+\bar{A})$

1

$\bar{A}B\bar{C} + \bar{B}\bar{C}$

$\bar{C}(\bar{A}B + \bar{B})$

$\bar{C}(\bar{A}+\bar{B})$

Finish attempt ...

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Select the suitable answer for each blank.

proof:

$AB + A$

$AB + A1$ (__1__) Identity

$A(B + 1)$ (__2__) Distributive

$A(1)$ (__3__) null

A (__4__) Identity

Answer 1: Choose...

Answer 2: Choose...

Answer 3: IdentityLaw

Answer 4: Identity Law

Differentiate the following function with respect to t,

$$5t^3 + \frac{1}{t^{\frac{5}{2}}} - 3$$

Select one:

- $15t^2 - \frac{5}{2t^{\frac{7}{2}}}$
- $15t^2 + \frac{5t^{\frac{3}{2}}}{2}$
- $15t^2 - \frac{5}{2t^{\frac{7}{2}}} - 3$
- $15t^2 - \frac{5}{2t^{\frac{7}{2}}}$
- None of the above

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Find the answer for the following binary division.

10100011 ÷ 10

Select one:

- Quotient = 10100011 & Remainder = 01
- Quotient = 01010101 & Remainder = 01
- Quotient = 01010001 & Remainder = 00
- Quotient = 1011000 & Remainder = 10
- None of the above.

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Question 13

Not yet answered

Marked out of 1.00

Flag question

Assume that you have to design a circuit for a light fixture controlled by two switches, where flipping one of the switches turns the light on when it is off and turns it off when it is on. Select the answer which gives the boolean expression for the above circuit.

Select one:

- $XY + \bar{X}.\bar{Y}$
- $X\bar{Y} + \bar{X}.Y$
- $\overline{XY} + X.Y$
- $\overline{X\bar{Y}} + \bar{X}.Y$
- None of the above

Quiz navigation

Finish attempt ...

Time left 0:19:09

1 2 3 4 5

11 12 13 14 15

21 22 23

Next page

Question 7

Not yet answered

Marked out of 1.00

Flag question

Find,

$$\frac{\mathrm{d}}{\mathrm{d}x}\left[\frac{x^2-5}{2x+1}\right]$$

Select one:

- $\frac{2\left(x^2+x+5\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x-5\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x+6\right)}{(2x+1)^2}$
- $\frac{2\left(x^2+x+11\right)}{(2x+1)^2}$

Select the suitable answer for each blank.

Q = (A + B) (A + C)

A.A + A.C + A.B + B.C – Distributive law

A + A.C + A.B + B.C – 1

A(1 + C) + A.B + B.C – Distributive law

A.1 + A.B + B.C – 2

A(1 + B) + B.C – Distributive law

A.1 + B.C – 3

Q = A + (B.C) – 4

Answer 1 Choose...

Answer 2

Answer 3

Answer 4

Choose...
Idempotent Law
Associative Law
De Morgan's Law
Identity Law
Inverse Law
Distributive law
Commutative Law
Universal Bound Law

Simplify,

$$\frac{\mathrm{d}}{\mathrm{d}x}\left[(2x-3)^4+\left(x^2+2\right)^2\right]$$

Select one:

- $68x^3-288x^2+424x-216$
- $68x^3-288x^2+440x-216$
- $68x^3-192x^2+184x-64$
- $80x^3-192x^2+176x-64$
- None of the above

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Question 13

Not yet answered

Marked out of 1.00

Flag question

Assume that you have to design a circuit for a light fixture controlled by three switches, where flipping one of the switches turns the light on when it is off and turns it off when it is on. Select the answer which gives the boolean expression for the above circuit.

Select one:

- $X\bar{Y}Z + X\bar{Y}\bar{Z} + \bar{X}YZ + \bar{X}\bar{Y}Z$
- $XYZ + X\bar{Y}\bar{Z} + \bar{X}YZ + \bar{X}\bar{Y}Z$
- $X\bar{Y}Z + \bar{X}\bar{Y}\bar{Z} + \bar{X}YZ + \bar{X}\bar{Y}Z$
- $\bar{X}YZ + X\bar{Y}\bar{Z} + \bar{X}YZ + \bar{X}\bar{Y}Z$
- None of the above

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Differentiate, with respect to x,

f(x)= $(2x-1)^4+(x^2-2)^2$

Select one:

- $68x^3-96x^2+36x-8$
- $68x^3-288x^2+424x-216$
- $68x^3-192x^2+184x-64$
- $68x^3-96x^2+40x-8$
- None of the above

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Simplify

$$\int x^3 - 2x + 5 \, dx$$

Select one:

- $\frac{x\left(x^3 - 4x + 20\right)}{4} + C$
- $\frac{x^4}{4} + x^2 + 5x + C$
- $\frac{x\left(x^3 - 4x + 12\right)}{4} + C$
- $\frac{x\left(x^3 - 4x - 8\right)}{4} + C$
- None of the above

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question

$f(x) = 2(24 - 5x)^{1/2}$ is a function that is defined for $x \leq 24/5$. Find the inverse function.

Select one:

- $f^{-1}(x) = 24/5 - x^2/20$
- $f^{-1}(x) = 5/2 + x/4$
- $f^{-1}(x) = 24/5 + x^2/20$
- $f^{-1}(x) = 12 - x^2/20$
- None of the above

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Simplify,

$$\frac{\mathrm{d}}{\mathrm{d}x}\left[(2x-3)^4+(x^2-3)^2\right]$$

Select one:

- $68x^3-288x^2+420x-216$
- $68x^3-288x^2+416x-216$
- $68x^3-96x^2+36x-8$
- $80x^3-192x^2+176x-64$
- None of the above

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Find,

$$\int (x^3 - 5x + 8)\, dx$$

Select one:

- $\frac{x\left(x^3 - 10x + 20\right)}{4} + C$
- $\frac{x\left(x^3 - 10x + 24\right)}{4} + C$
- $\frac{x\left(x^3 - 10x + 32\right)}{4} + C$
- $\frac{x\left(x^3 - 10x - 12\right)}{4} + C$
- None of the above