Let a be a complex number and $f(x) = x^4 - x^2 - 12$. If $x - a$ is a factor of $f(x)$ then

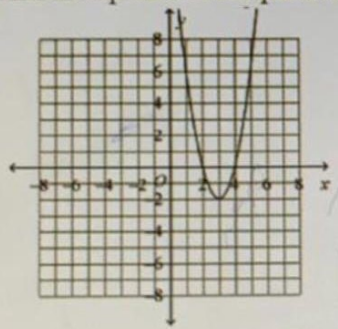
- $x + a$ is a factor of f too.
- $-x + a$ is a factor of f too.
- $-x - a$ is a factor of f too.
- $f(x + a) = 0$.

A

Conjugate:
x-a / x+a

Question No. 22

Write the equation of this parabola in vertex form.



- $y = 2(x+3)^2 + 2$
- $y = (x-3)^2 - 2$
- $y = 2(x+3)^2 - 2$
- $y = 2(x-3)^2 - 2$

D

Save & Next

Total questions in exam: **40** | Answered: **1**

Question No. 2

If $x \in \mathbb{N}$, then the value of i^{4x-1} is

- -1
- 1
- $-i$
- i

C

Save & Next حفظ والتالي

Total questions in exam: **40** | Answered: **0**

Question No.

Factoring $x^3 - 8y^3$ gives

- $(x-2y)(x^2+2xy+4y^2)$
- $(x+2y)(x^2-2xy+4y^2)$
- $(x-2y)(x^2-2xy+y^2)$
- x^3-8y^3

A

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

$8y^3 = (2y)^3$

Save & Next حفظ والتالي

MKCL OES

Total questions in exam: **25** | Answered: **8**

Question No. 4

Factor: $9 - 6cd + c^2d^2$

- $(3 + cd)(3 - cd)$
- $(3 + cd)\ (cd - 3)$
- $(3 - cd)^2$
- $(3 + cd)^2$

C

$(x-y)^2 = x^2 - 2xy - y^2$

MKCL OES
Online Evaluation System

Total questions in exam: **40** | Answered: **3**

Question No. 4

The supplement of the angle 45° is:

- 45°
- 60°
- 80°
- 135°

D

supplement = 180
180 = 45 + x
180 - 45 = x
x = 135

Total questions in exam: 40 | Answered: 4

Question No. 5

Let f be the one-to-one function defined by this set of ordered pairs {(-3,2), (4,5),(7,4),(10,19)}. Then $f^{-1}(5) =$

- 4
- 5
- $\frac{1}{5}$
- $\frac{1}{4}$

A

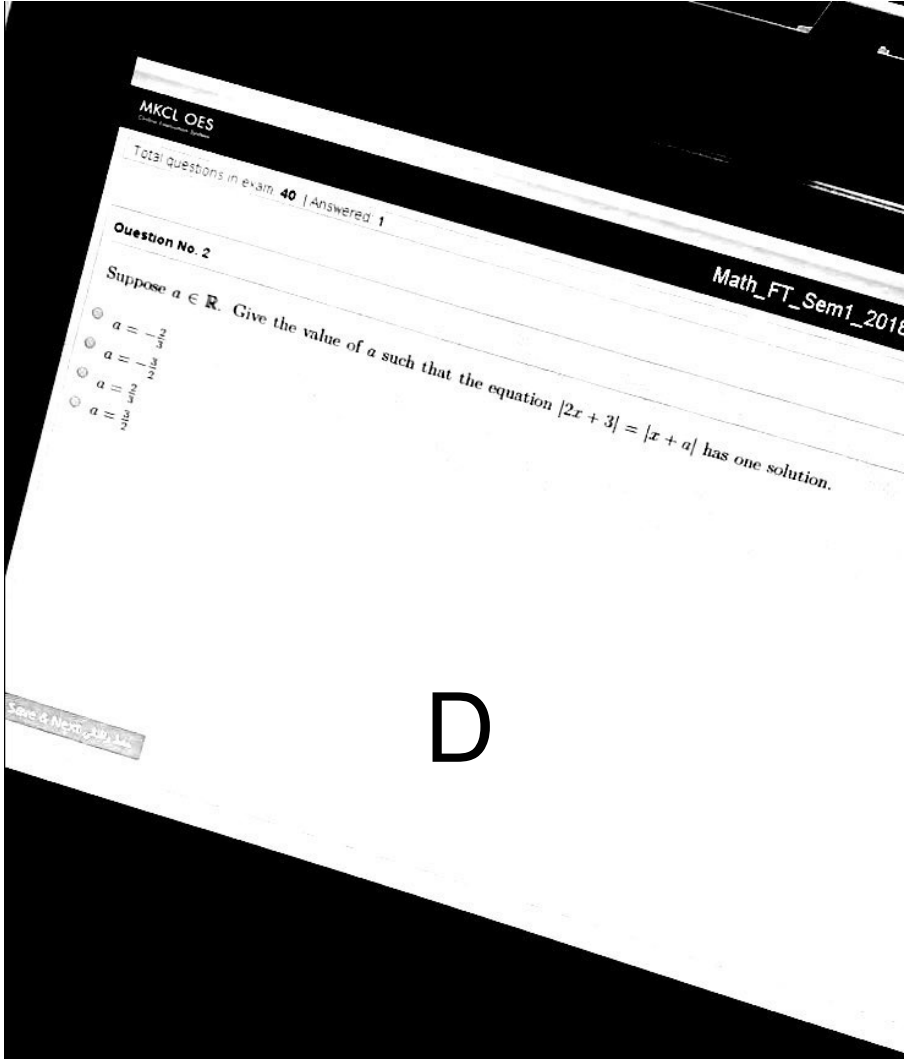
Save & Next

Question No. 18

The function has an inverse if

- None of these answers
- doesn't satisfy the horizontal line test
- it is one-to-one
- it is quadratic

C



Total questions in exam: 40 | Answered: 7

Question No. 8

Let U={1,2,3,4,5,6,7}, A={1,3,5,7}, and B={3,4,6}. Find AU B′

- {2,4,3}
- {1,2,3,5,7}
- {4, 6}
- {1,2,3,4}

B

Save & Next حفظ والتالي

Total questions in exam: **40** | Answered: **6**

Question No. 7

The horizontal asymptote to the graph of $f(x) = 2^x - 3$.

- y = -3
- x = -2
- y = 3
- x = 2

A

Save & Next حفظ والتالي

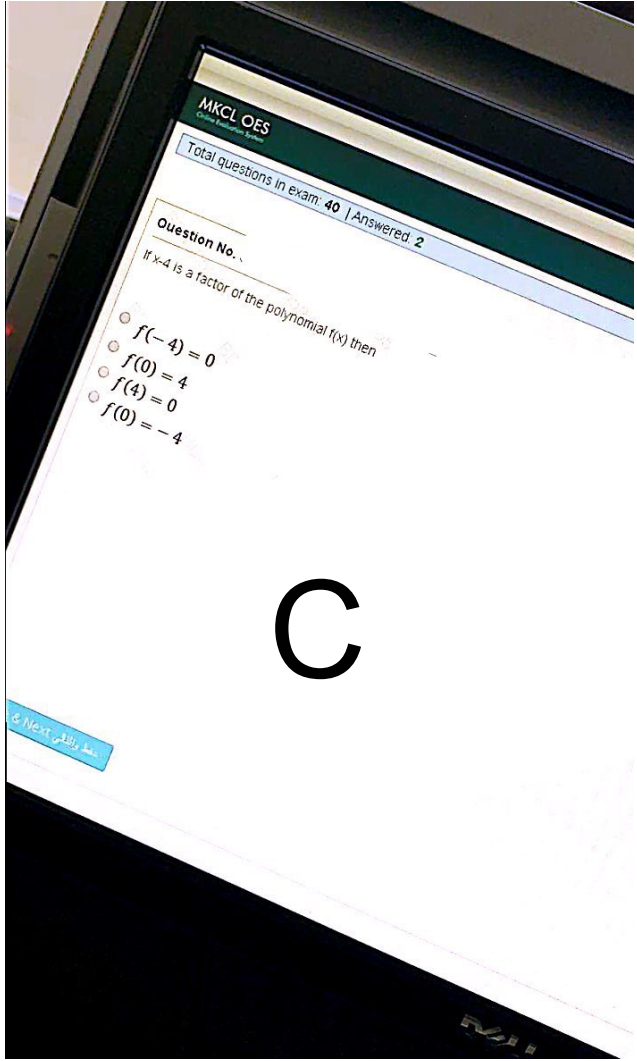
Total questions in exam: 40 | Answered: 2

Question No. 3

Evaluate $\lim_{x \to -\infty} \frac{x^3+x^2-1}{x^2-x-1} =$

- -1
- 0
- $-\infty$
- 1

C



Total questions in exam: **40** | Answered: **5**

Question No. 6

Evaluate $\lim_{x \to \infty} \left(x^3 + x - 3\right) =$

- 0
- 3
- -3
- ∞

D

Question No. 33

The function $f(x)=\begin{cases} kx-k & \text{if } x\geq 3 \\ 4 & \text{if } x<3 \end{cases}$ is continuous if

- $k=2$
- $k=3$
- $k=\frac{4}{3}$
- $k=1$

A

Total questions in exam: 40 | Answered: 2

If $f(x) = 1 - \sqrt{x+2}$, then the domain of $f^{-1}(x)$ is

- $(-\infty, \infty)$
- $[1, \infty)$
- $[-2, \infty)$
- $(-\infty, 1]$

D

Next التالي

Question No. 18

The function $f(x) = -2x^2 + 4x + 1$ is equivalent to

- $f(x) = -2(x-1)^2 - 3$
- $f(x) = -2(x-1)^2 + 3$
- $f(x) = 2(x-1)^2 + 3$
- $f(x) = -2(x+1)^2 + 3$

B

Total questions in exam: **40** | Answered: **4**

Question No. 6

Evaluate $\lim_{x \to -\infty} \frac{x+5}{2x+3} =$

- ∞
- 0
- $\frac{1}{2}$
- $\frac{5}{3}$

C

Save & Next حفظ والتالي

Total questions in exam: 40 | Answered: 7

Question No. 8

Let U={1,2,3,4,5,6,7}, A={1,3,5,7}, and B={3,4,6}. Find AU B′

- {2,4,3}
- {1,2,3,5,7}
- {4, 6}
- {1,2,3,4}

B

Save & Next

Total questions in exam: **40** | Answered: **2**

Question No. 4

If $f(x) = 1 - \sqrt{x+2}$, then the domain of $f^{-1}(x)$ is

- $(-\infty, \infty)$
- $[1, \infty)$
- $[-2, \infty)$
- $(-\infty, 1]$

D

Next التالي

Question No. 2

Suppose $a \in \mathbb{R}$. Give the value of a such that the equation $|2x + 3| = |x + a|$ has one solution.

- $a = -\frac{2}{3}$
- $a = -\frac{3}{2}$
- $a = \frac{2}{3}$
- $a = \frac{3}{2}$

D

Save & Next حفظ والتالي

Question No. 33

if $f(x)=\begin{cases}\frac{x^2-1}{x-1} & \text{if} \quad x\neq 1 \\ 1 & \text{if} \quad x=1\end{cases}$ then $\lim_{x\to 1} f(x)$ is

- -2
- 2
- 1
- 3

B?

Total questions in exam: **40** | Answered: **6**

Question No. 7

The horizontal asymptote to the graph of $f(x) = 2^x - 3$.

- y = -3
- x = -2
- y = 3
- x = 2

A

Save & Next حفظ والتالي

Total questions in exam: **40** | Answered: **2**

If x-4 is a factor of the polynomial f(x) then

- $f(-4) = 0$
- $f(0) = 4$
- $f(4) = 0$
- $f(0) = -4$

C

& Next التالي

Total questions in exam: 40 | Answered: 4

Question No. 5

Let f be the one-to-one function defined by this set of ordered pairs {(-3,2), (4,5),(7,4),(10,19)}. Then $f^{-1}(5) =$

- 4
- 5
- $\frac{1}{5}$
- $\frac{1}{4}$

A

Save & Next

Total questions in exam: **40** | Answered: **5**

Question No. 6

Evaluate $\lim_{x \to \infty} \left(x^3 + x - 3\right) =$

- 0
- 3
- -3
- ∞

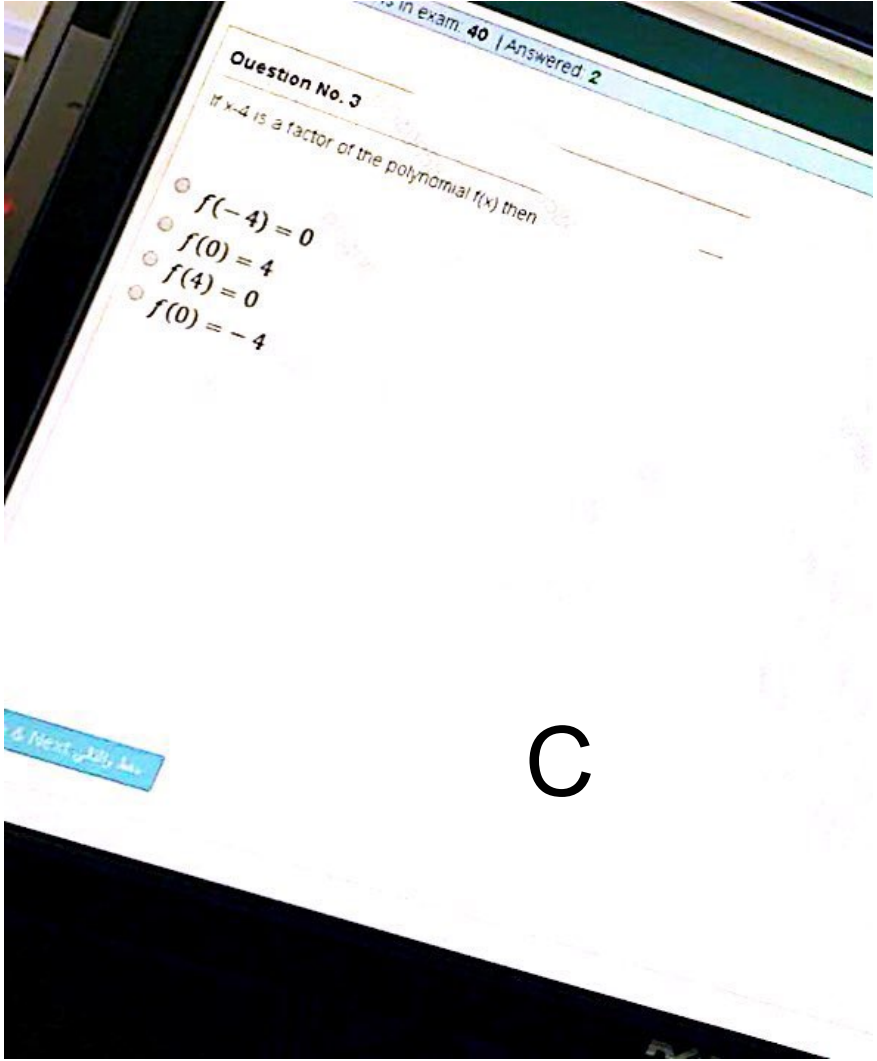
D

Question No. 3

Evaluate $\lim_{x \to -\infty} \frac{x^3+x^2-1}{x^2-x-1} =$

- -1
- 0
- $-\infty$
- 1

C



C

Total questions in exam: 40 | Answered: 2

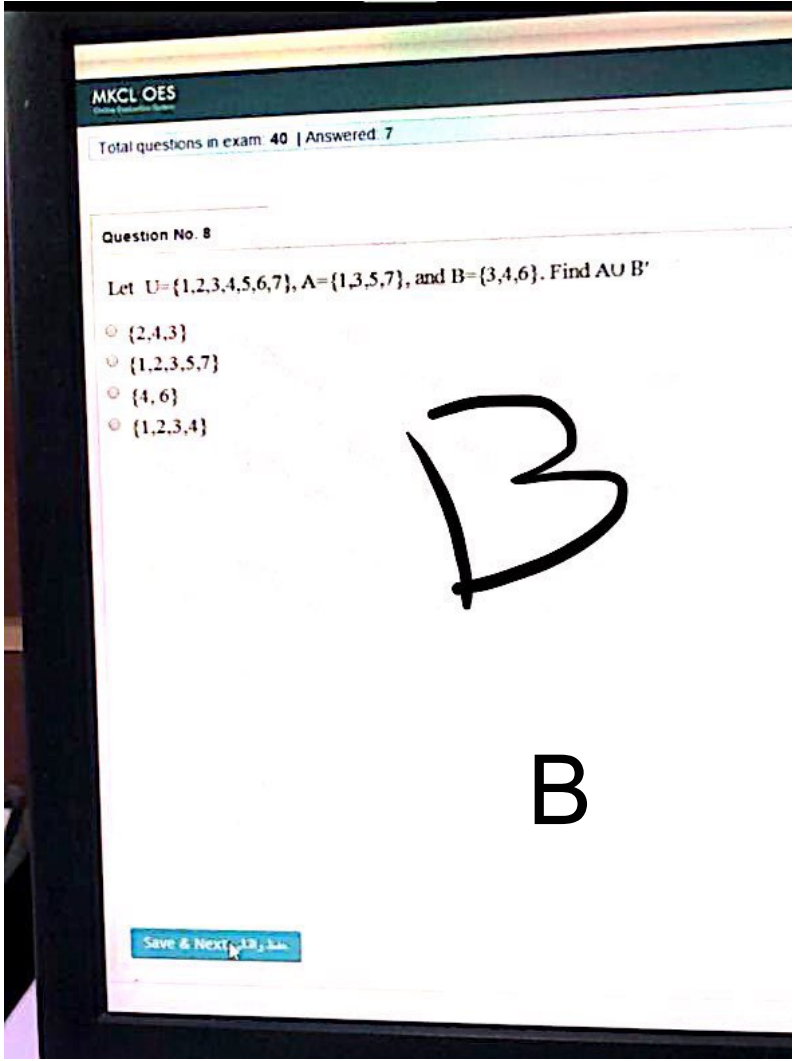
Question No. 4

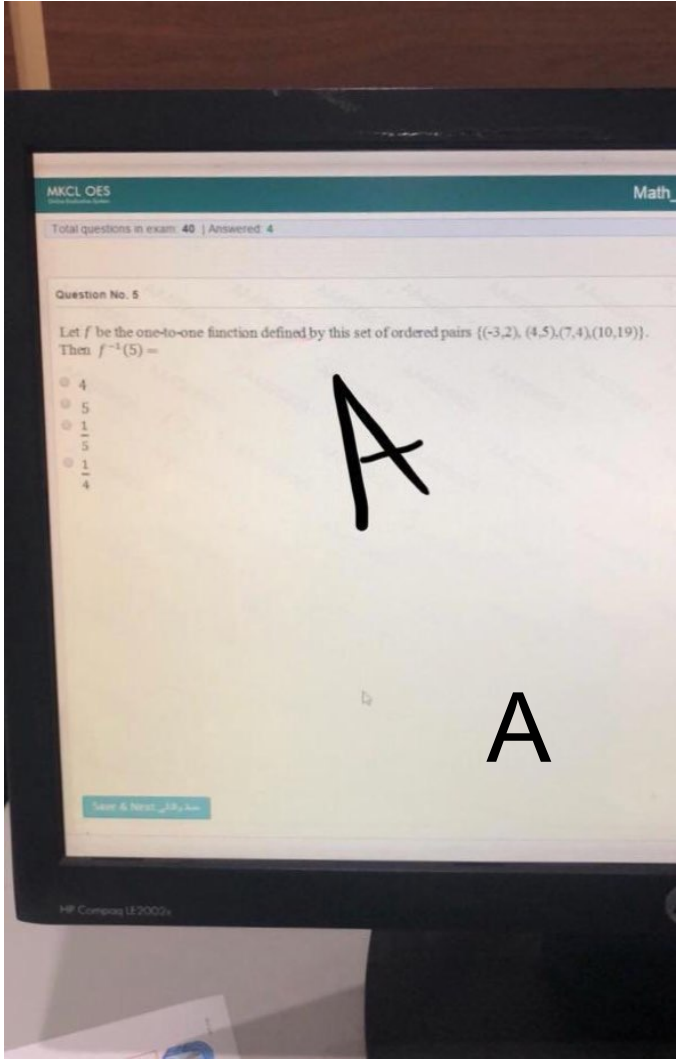
If $f(x) = 1 - \sqrt{x+2}$, then the domain of $f^{-1}(x)$ is

- $(-\infty, \infty)$
- $[1, \infty)$
- $[-2, \infty)$
- $(-\infty, 1]$

D

Next





Total questions in exam: 40 | Answered: 1

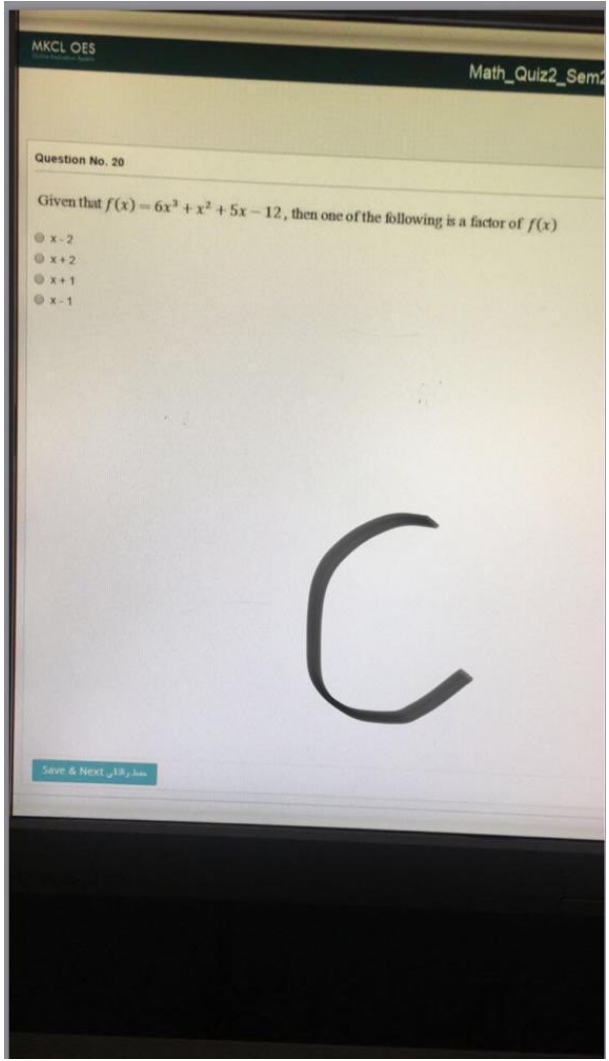
Question No. 2

Suppose $a \in \mathbb{R}$. Give the value of a such that the equation $|2x + 3| = |x + a|$ has one solution.

- $a = -\frac{2}{3}$
- $a = -\frac{3}{2}$
- $a = \frac{2}{3}$
- $a = \frac{3}{2}$

D

Save & Next حفظ والتالي



C

D

X-1

135 of 202

Question No. 25

The inverse of $f(x) = \frac{\sqrt[3]{x} - 5}{2}$ is

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

D

D

$X = (3\sqrt{y} - 5)/2$

$2x = 3\sqrt{y} - 5$

$2x+5 = 3\sqrt{y}$

$(2x+5)^3 = y$

Total questions in exam: 40 | Answered: 2

Question No. 4

If $f(x) = 1 - \sqrt{x+2}$, then the domain of $f^{-1}(x)$ is

- $(-\infty, \infty)$
- $[1, \infty)$
- $[-2, \infty)$
- $(-\infty, 1]$

D

Range of $1-\sqrt{x+2} = (-\infty, 1]$
domain of $if^{-1}(x)$ is range of $f(x)$

Next

If $p(x)=\sqrt{x+3}$ and $q(x)=\sqrt{x-4}$. Determine the domain of $(p\cdot q)(x)$.

- $x \in (-\infty, -3) \cup (4, \infty)$
- $x \in [-3, 4]$
- $x \in [4, \infty)$
- $x \in (-3, 4)$

C

ave & Next حفظ والتالي

Total questions in exam: **40** | *Answered: 4*

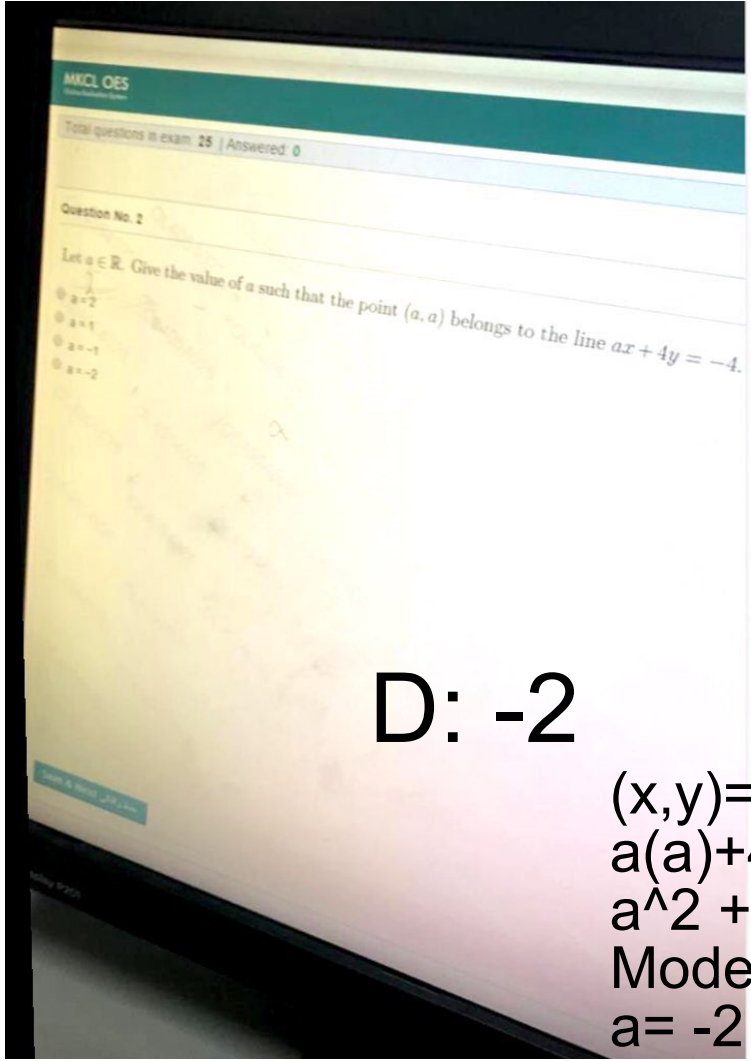
Question No. 6

Evaluate $\lim_{x \to -\infty} \frac{x+5}{2x+3} =$

- ∞
- 0
- $\frac{1}{2}$
- $\frac{5}{3}$

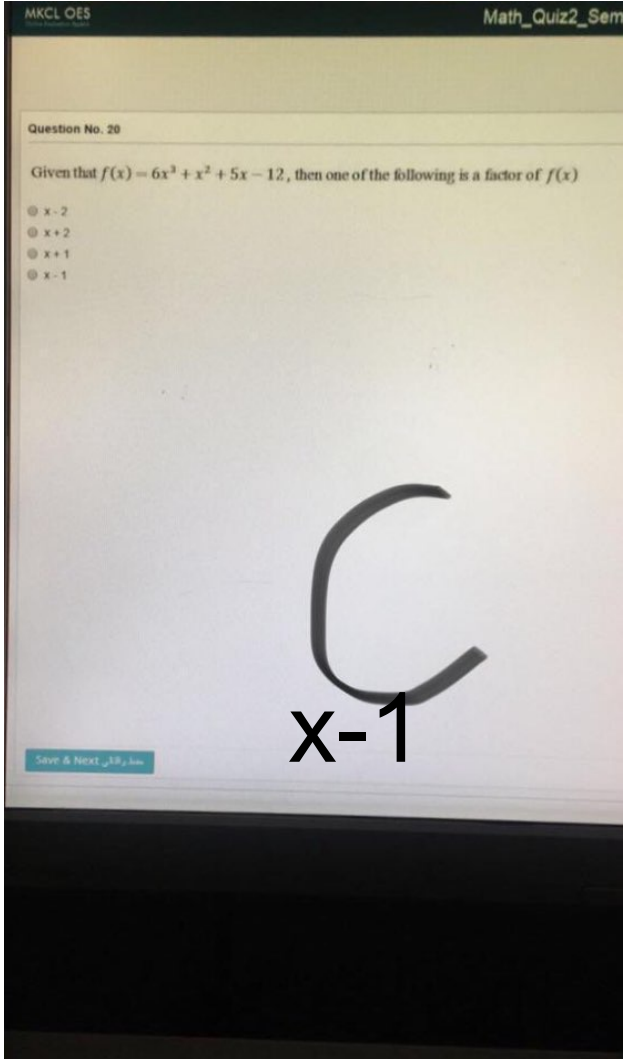
C

Save & Next حفظ والتالي



D: -2

(x,y)=(a,a)
a(a)+4a=-4
a^2 + 4a +4=0
Mode: 5,3
a= -2



Question No. 25

The inverse of $f(x) = \frac{\sqrt[3]{x} - 5}{2}$ is

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

D

D

Total questions in exam: 40 | Answered: 1

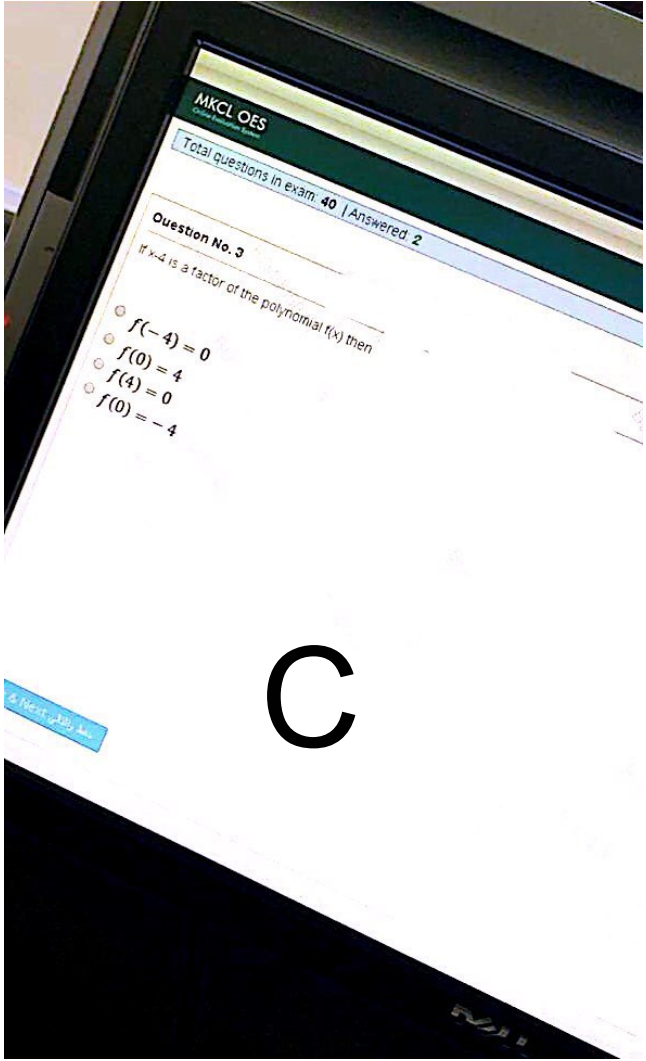
Question No. 2

Suppose $a \in \mathbb{R}$. Give the value of a such that the equation $|2x + 3| = |x + a|$ has one solution.

- $a = -\frac{2}{3}$
- $a = -\frac{3}{2}$
- $a = \frac{2}{3}$
- $a = \frac{3}{2}$

D

Save & Next حفظ والتالي



C

Total questions in exam: 40 | Answered: 2

Question No. 4

If $f(x) = 1 - \sqrt{x+2}$, then the domain of $f^{-1}(x)$ is

- $(-\infty, \infty)$
- $[1, \infty)$
- $[-2, \infty)$
- $(-\infty, 1]$

D

Next

Total questions in exam: 40 | Answered: 7

Question No. 8

Let U={1,2,3,4,5,6,7}, A={1,3,5,7}, and B={3,4,6}. Find AU B'

- {2,4,3}
- {1,2,3,5,7}
- {4, 6}
- {1,2,3,4}

B

Save & Next

Question No. 3

Evaluate $\lim_{x \to -\infty} \frac{x^3+x^2-1}{x^2-x-1} =$

- -1
- 0
- $-\infty$
- 1

C

[redacted]

Total questions in exam: **40** | Answered: **2**

If x-4 is a factor of the polynomial f(x) then

- $f(-4) = 0$
- $f(0) = 4$
- $f(4) = 0$
- $f(0) = -4$

C

& Next التالي

Total questions in exam: **40** | Answered: **6**

Question No 7

The horizontal asymptote to the graph of $f(x) = 2^x - 3$.

- y = -3
- x = -2
- y = 3
- x = 2

A

Save & Next حفظ والتالي

Total questions in exam: 40 | Answered: 1

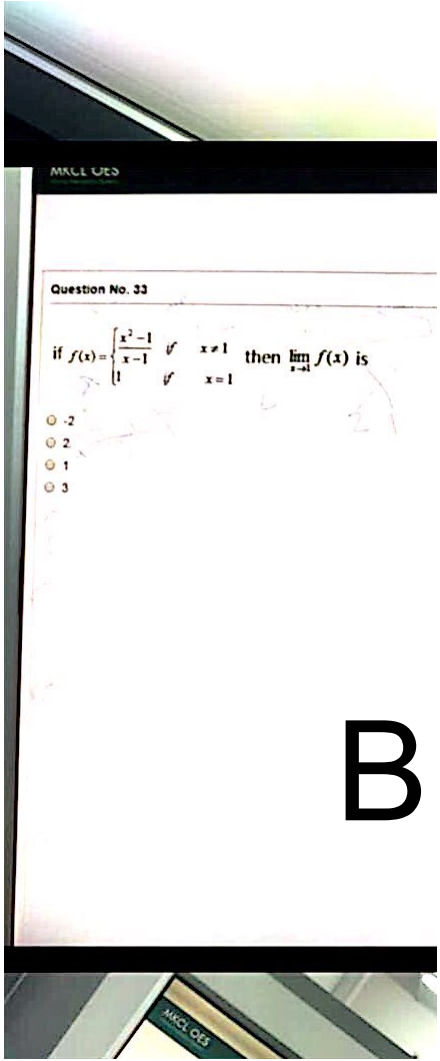
Question No. 2

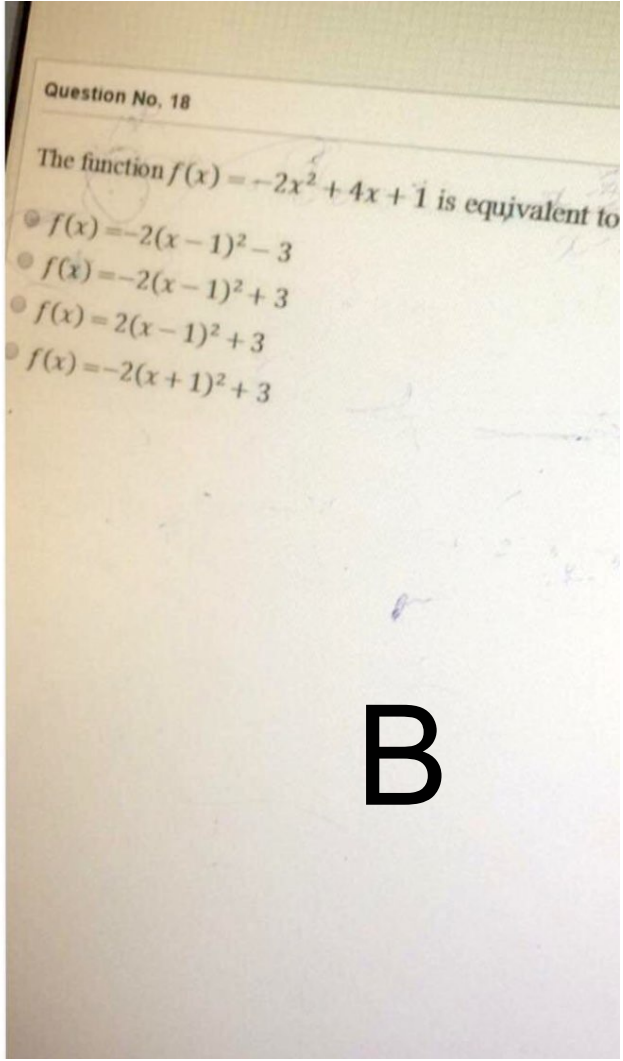
Suppose $a \in \mathbb{R}$. Give the value of a such that the equation $|2x+3| = |x+a|$ has one solution.

- $a = -\frac{2}{3}$
- $a = -\frac{3}{2}$
- $a = \frac{2}{3}$
- $a = \frac{3}{2}$

D

Save & Next حفظ والتالي





Question No. 33

The function $f(x)=\begin{cases} kx-k & \text{if } x\geq 3 \\ 4 & \text{if } x<3 \end{cases}$ is continuous if

- $k=2$
- $k=3$
- $k=\frac{4}{3}$
- $k=1$

A

$kx-k = 4$
$k(3) - k = 4$
$k(3-1) = 4$
$2k = 4$, $k= 2$

Total questions in exam: **40** | *Answered: 4*

Question No. 6

Evaluate $\lim_{x \to -\infty} \frac{x+5}{2x+3} =$

- ∞
- 0
- $\frac{1}{2}$
- $\frac{5}{3}$

C

x/2x = 1/2

Save & Next حفظ والتالي

Total questions in exam: 40 | Answered: 2

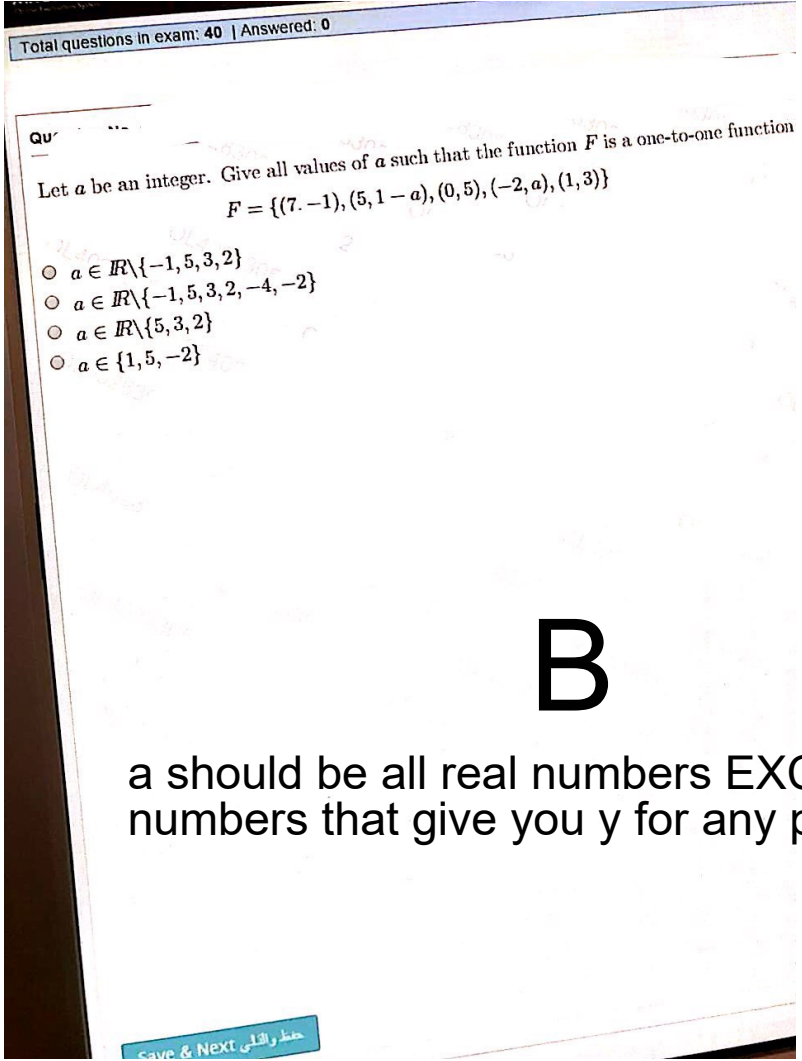
Question No. 1

If $f(x) = 1 - \sqrt{x+2}$, then the domain of $f^{-1}(x)$ is

- $(-\infty, \infty)$
- $[1, \infty)$
- $[-2, \infty)$
- $(-\infty, 1]$

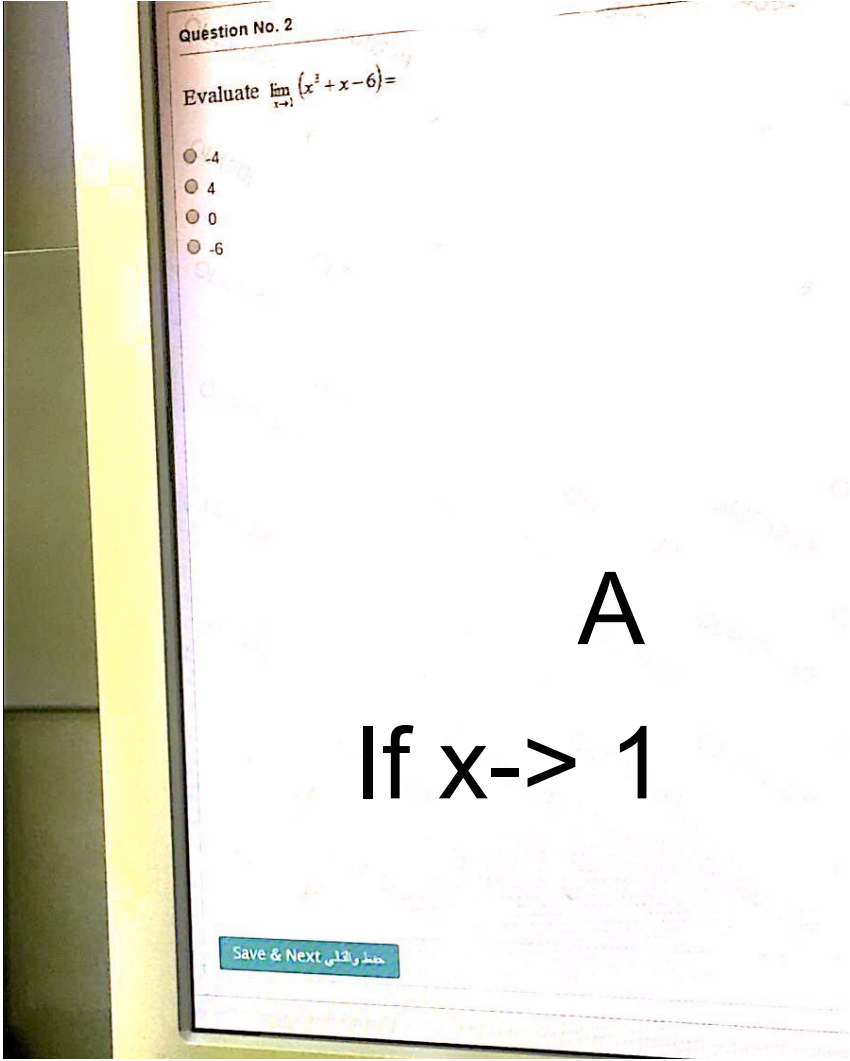
D

Next التالي



B

a should be all real numbers EXCEPT numbers that give you y for any point



If $p(x)=\sqrt{x+3}$ and $q(x)=\sqrt{x-4}$. Determine the domain of $(p\cdot q)(x)$.

- $x \in (-\infty, -3) \cup (4, \infty)$
- $x \in [-3, 4]$
- $x \in [4, \infty)$
- $x \in (-3, 4)$

C

ave & Next حفظ والتالي

Total questions in exam: 40 | Answered: 5

Let $a \in \mathbb{R}$ and $f(x) = \log_{a-2}(x+1) - a$. Give the condition on a such that $f(x)$ is increasing.

- $a \in [3, \infty)$
- $a \in (3, \infty)$
- $a \in (-\infty, 3)$
- $a \in (1, 3)$

B

log a-2 (x+1) = a
x+1 = (a-2)^a
a-2 must be greater than 1 to be increasing
a > 3

Question No. 20

The solution set of the equation $3(x+3) = 3x - 9$ is

- the set of real numbers
- {2,3}
- 1
- Ø

D

$3(x+3) = 3x - 9$
$3x + 9 = 3x - 9$
$3x - 3x = -9 - 9$
$0 = 18$ (Ø)

Total questions in exam: 40 | Answered: 0

Question No. 22

The function $f(x)=\begin{cases} x^4 & \text{if } x\le 1 \\ k-x^4 & \text{if } x>1 \end{cases}$ is continuous if

- k=-1
- k=1
- k=0
- k=2

D

x = 1
1^4 = k - 1^4
1 = k -1
k = 2

Question No. 17

The domain of the function $f(x) = e^{x^2-3x+1} - 2$ is:

- $\mathbb{R}$
- $(0, \infty)$
- $(-1, \infty)$
- $(-\infty, 0)$

A

Question No. 13

Use the square root property to solve this quadratic equation

$$x^2 + 20 = 4$$

- $\pm 4i$
- $\sqrt{16}$
- -4
- $\pm\sqrt{24}$

A

x^2 + 20 - 4 = 0
x^2 + 16 = 0
Mode 5,3

Save & Next حفظ والتالي

Total questions in exam: 40 | Answered: 7

Question No. 8

Let U={1,2,3,4,5,6,7}, A={1,3,5,7}, and B={3,4,6}. Find AU B'

- {2,4,3}
- {1,2,3,5,7}
- {4, 6}
- {1,2,3,4}

B

Save & Next

Total questions in exam: 40 | Answered: 0

Question No. 2

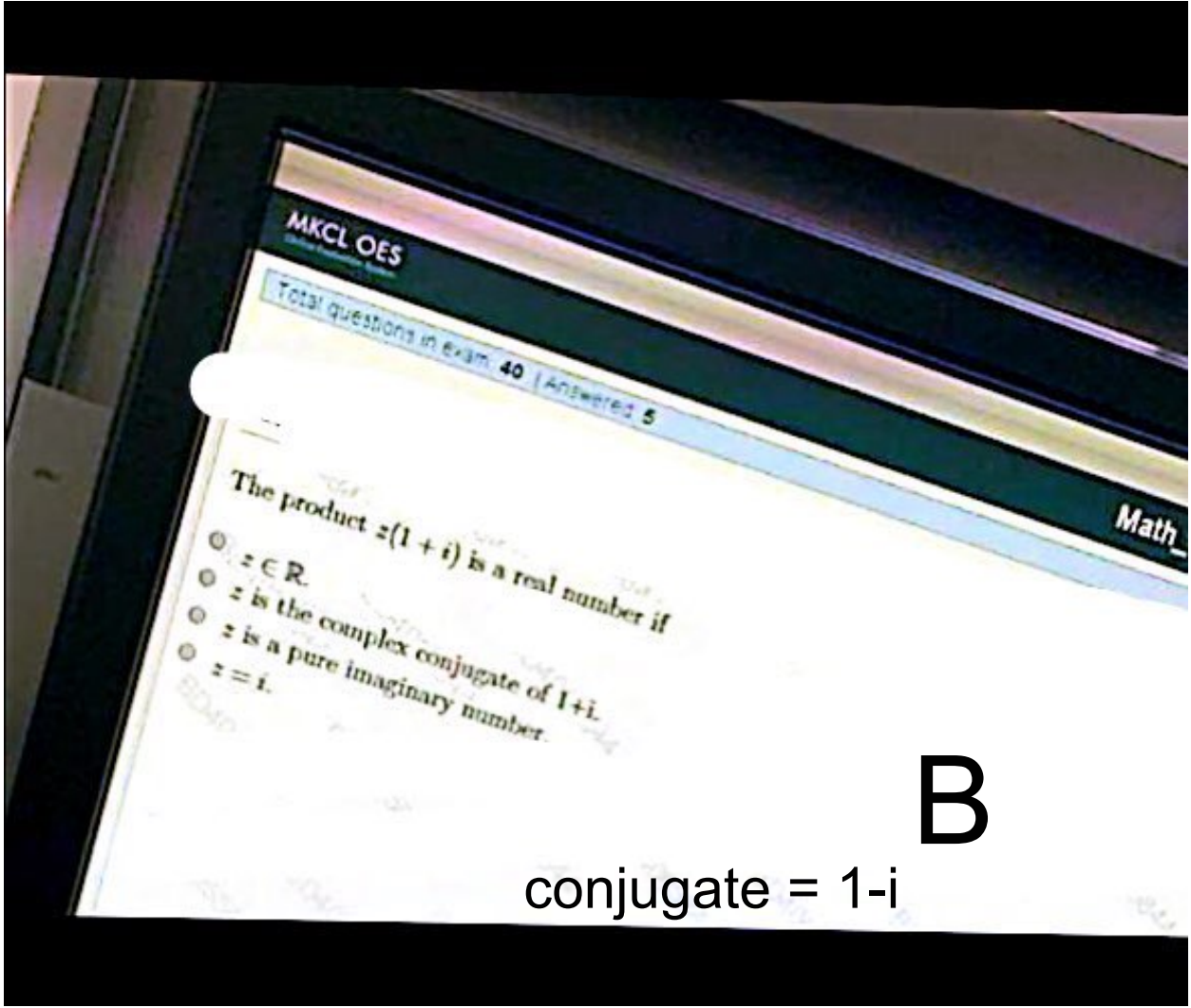
The solution of the equation $2^x = 3^{2x-1}$ is

- $\frac{\ln 2}{2\ln 3 - \ln 2}$
- $\frac{\ln 2}{\ln 2 - 2\ln 3}$
- $\frac{\ln 3}{\ln 2 - 2\ln 3}$
- $\frac{\ln 3}{2\ln 3 - \ln 2}$

Save & Next حفظ والتالي

D

in 2^x = in 3^2x-1
x in 2 = (2x-1) in 3
x in 2 = 2x in 3 - in 3
2x in 3 - x in 2 = in 3
x (2 in 3 - in 2) = in 3
x = in 3 / (2 in 3 - in 2)

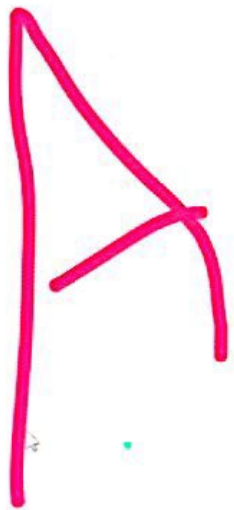


Total questions in exam: 40 | Answered: 4

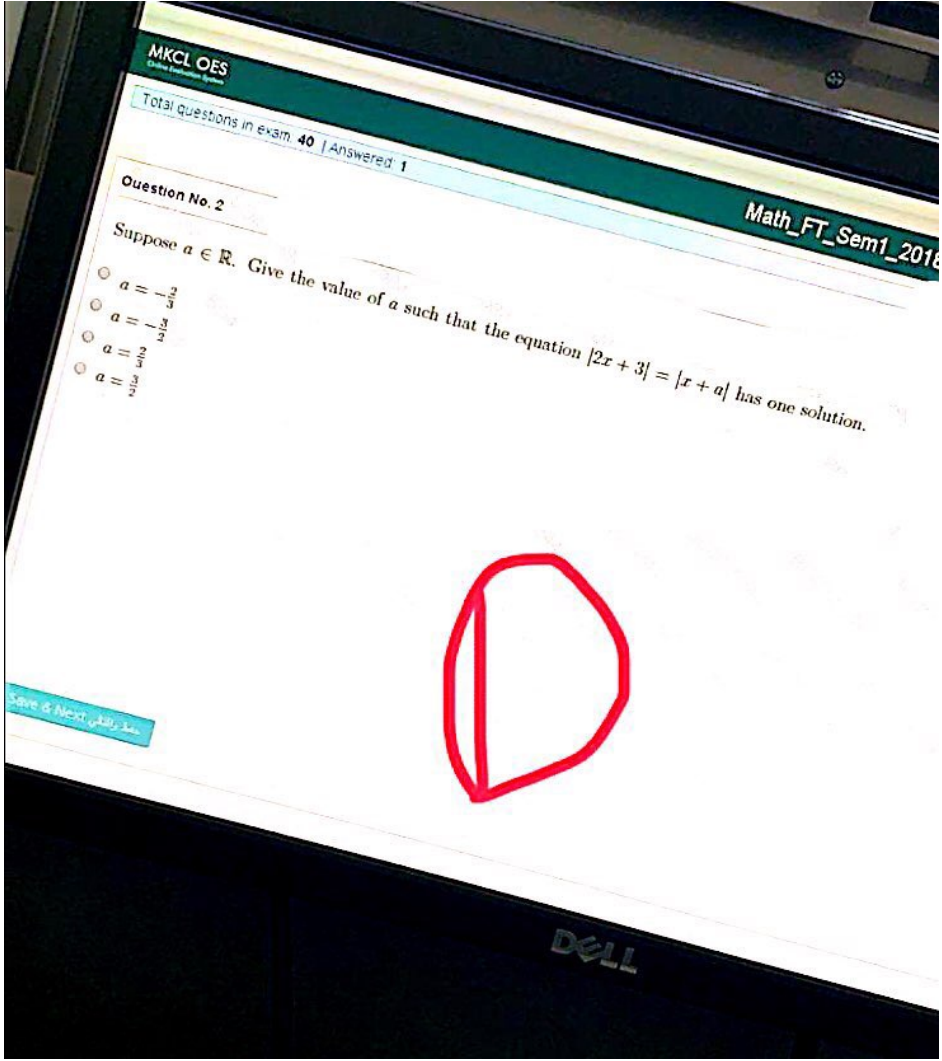
Question No. 5

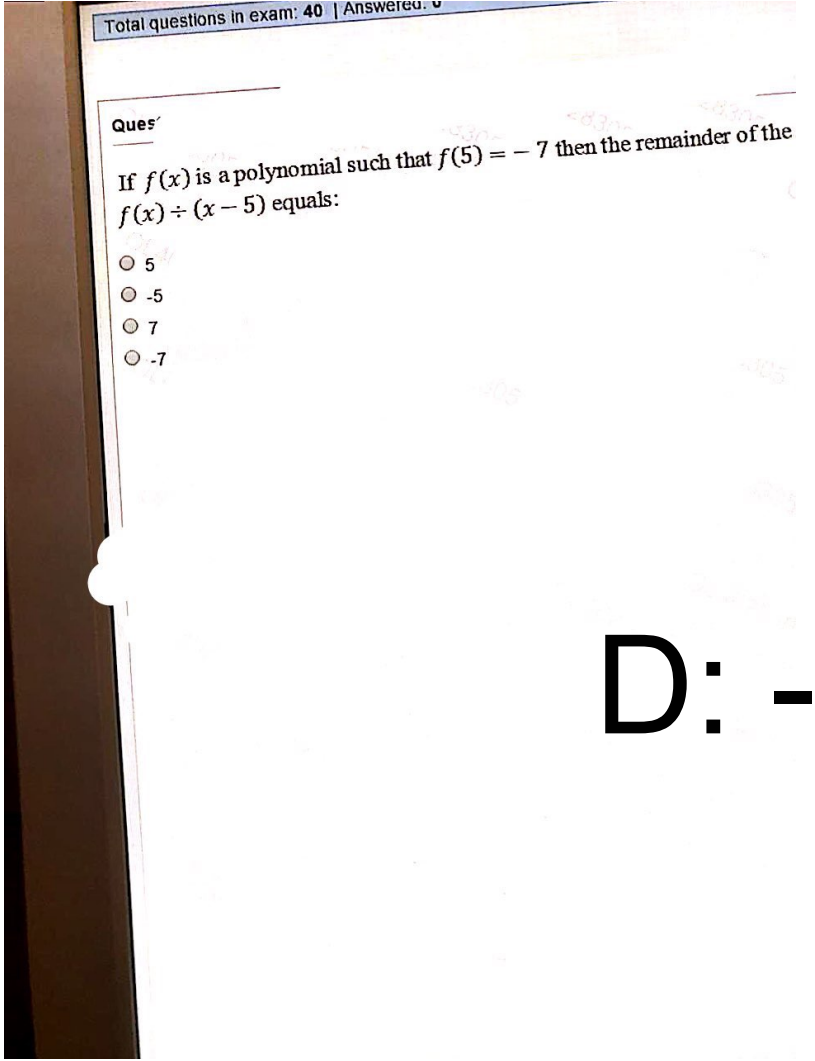
Let f be the one-to-one function defined by this set of ordered pairs {(-3,2), (4,5),(7,4),(10,19)}. Then $f^{-1}(5) =$

- 4
- 5
- $\frac{1}{5}$
- $\frac{1}{4}$



Save & Next





D: -7

Total questions in exam: **40** | Answered: **5**

Question No. 6

Evaluate $\lim_{x \to \infty} \left(x^3 + x - 3\right) =$

- 0
- 3
- -3
- ∞

D

Total questions in exam: **40** | Answered: **0**

Question No. 22

The function $f(x)=\begin{cases} x^4 & if \ x\le 1 \\ k-x^4 & if \ x>1 \end{cases}$ is continuous if

- k=-1
- k=1
- k=0
- k=2

D

Total questions in exam: 40 | Answered: 7

Question No. 8

Let U={1,2,3,4,5,6,7}, A={1,3,5,7}, and B={3,4,6}. Find AU B′

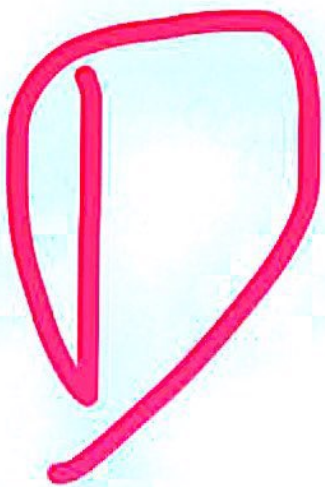
- {2,4,3}
- {1,2,3,5,7}
- {4, 6}
- {1,2,3,4}

Save & Next حفظ والتالي

Question No. 5

If $f(x) = 1 - \sqrt{x+2}$, then the domain of $f^{-1}(x)$ is

- $[1, \infty)$
- $[-2, \infty)$
- $(-\infty, \infty)$
- $(-\infty, 1]$



D

Question No. 2

Evaluate $\lim_{x \to 1} (x^3 + x - 6) =$

- -4
- 4
- 0
- -6

A

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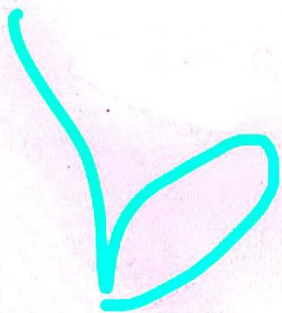
Question No. 16

Evaluate $\lim_{x \to -3} \frac{x^2 + 7x + 12}{x + 3} =$

- 4
- 1
- -3
- 0



B

x^2+7x+12 = (x+3)(x+4)
(x+3)(x+4) / (x+3)
x + 4 = -3 + 4 = 1

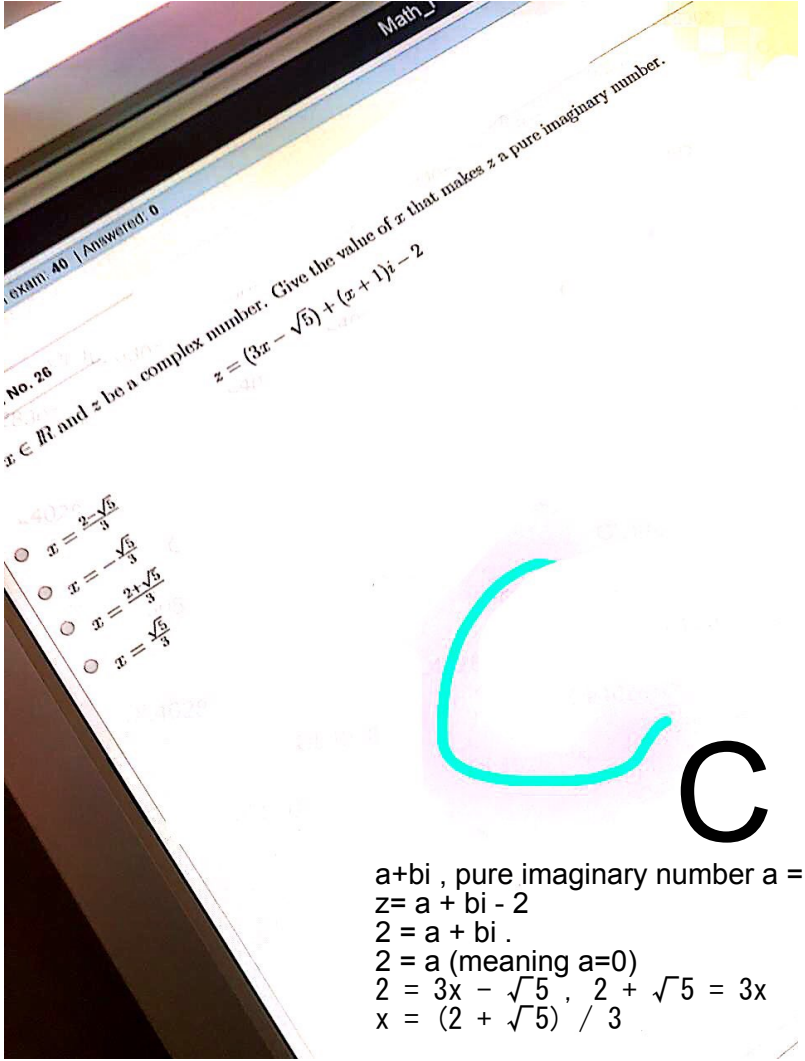
Total questions in exam: 40 | Answered: 0

Question No. 17

The domain of the function $f(x) = e^{x^2-3x+1} - 2$ is:

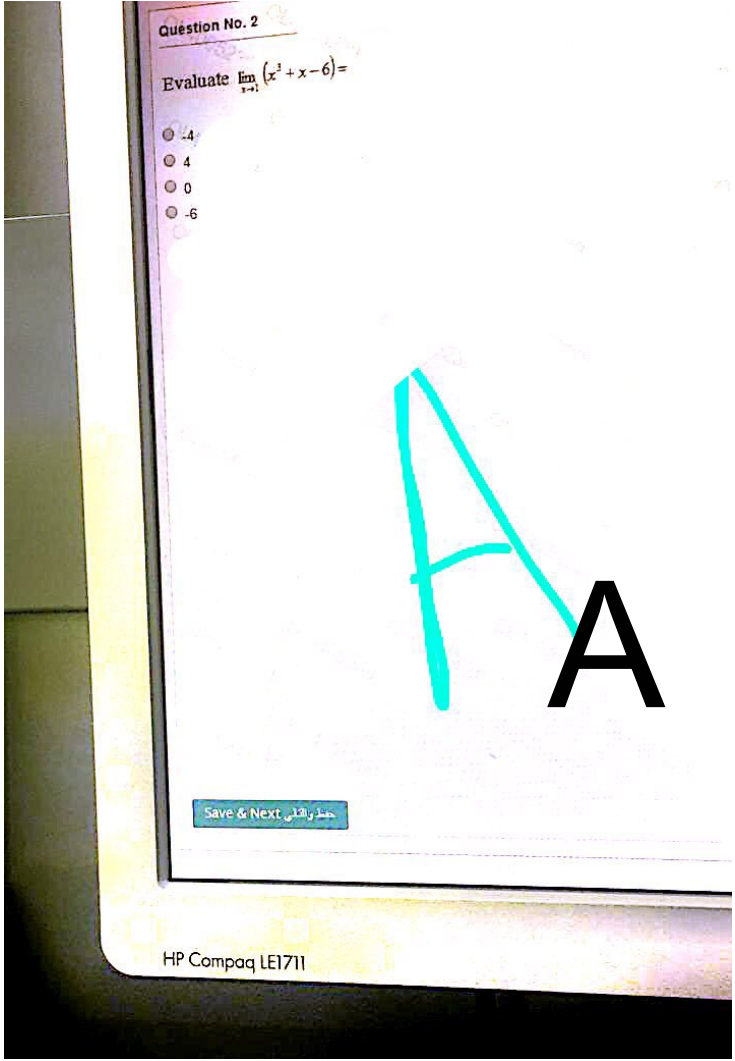
- $\mathbb{R}$
- $(0, \infty)$
- $(-1, \infty)$
- $(-\infty, 0)$

A



C

a+bi , pure imaginary number a = 0
z= a + bi - 2
2 = a + bi .
2 = a (meaning a=0)
2 = 3x − √5 , 2 + √5 = 3x
x = (2 + √5) / 3



Total questions in exam: 40 | Answered: 22

Let $f(x) = -\frac{3}{2}x + 4$, find the value of a such that $f(2a) = 7$.

- a = 0.
- a = 1.
- a = −1.
- a = 2.

C

$-3/2\ x + 4 = 7$

$-\ 3/2\ (2a) + 4 = 7$

$-\ 3/2\ (2a) = 3$

$2a = -6/3\ ,\ 2a = -2$

$a = -1$

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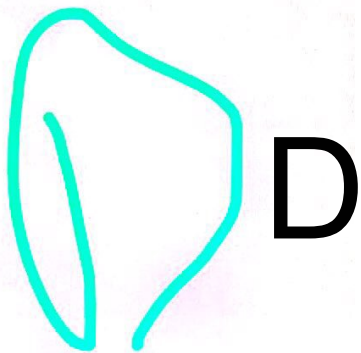
Total questions in exam: **40** | Answered: **0**

The function $f(x)=\begin{cases} x^4 & \text{if } x\le 1 \\ k-x^4 & \text{if } x>1 \end{cases}$ is continuous if

- k=-1
- k=1
- k=0
- k=2



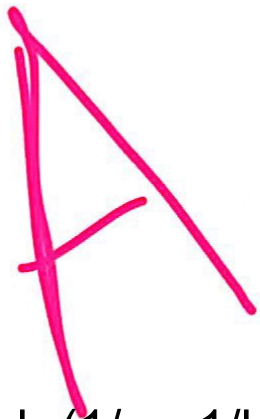
D

Total questions in exam: 40 | Answered: 0

Question No. 1

Perform the indicated operations $a\,b(a^{-1} - b^{-1})$,where $a \neq 0, b \neq 0$

- $b - a$
- $\frac{1}{b} - \frac{1}{a}$
- 0
- $a - b$



A

ab (1/a - 1/b)
تامالمقلا ديحوت
ab ((b-a)/ab)
b - a (ab is deleted with ab)

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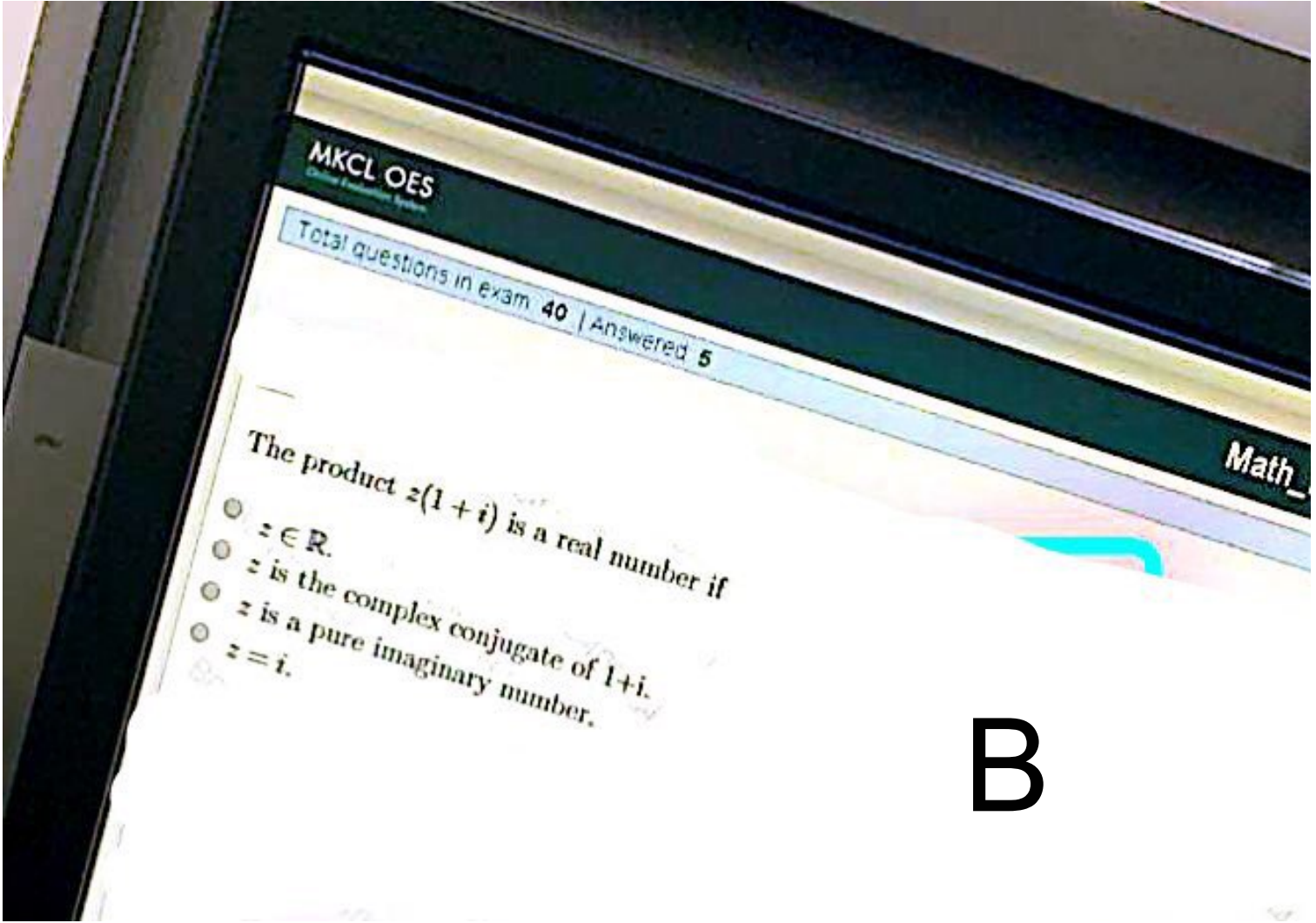
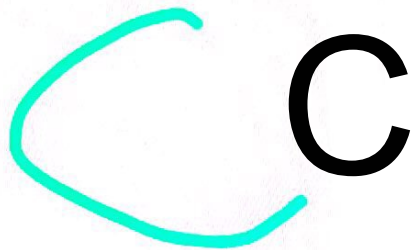


The graph of $f(x) = -3x^2 + x + 4$ is

- Open left
- Open right
- Open down
- Open up



ax^2 , if a>0 then open up
if a < 0 then open down

Question No. 17

The domain of the function $f(x) = e^{x^2-3x+1} - 2$ is:

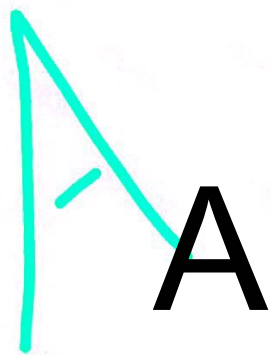
- $\mathbb{R}$
- $(0, \infty)$
- $(-1, \infty)$
- $(-\infty, 0)$

A

Use the square root property to solve this quadratic equation

$$x^2 + 20 = 4$$

- $\pm 4i$
- $\sqrt{16}$
- -4
- $\pm\sqrt{24}$



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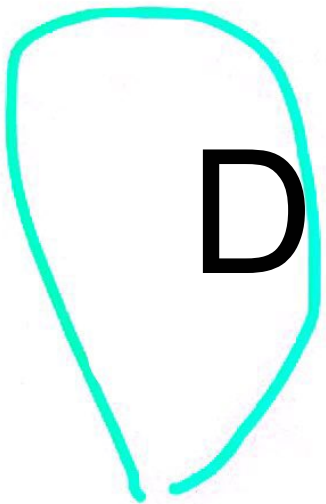
Total questions in exam: 40 | Answered: 0

Question No. 2

The solution of the equation $2^x = 3^{2x-1}$ is

- $\frac{\ln 2}{2\ln 3 - \ln 2}$
- $\frac{\ln 2}{\ln 2 - 2\ln 3}$
- $\frac{\ln 3}{\ln 2 - 2\ln 3}$
- $\frac{\ln 3}{2\ln 3 - \ln 2}$



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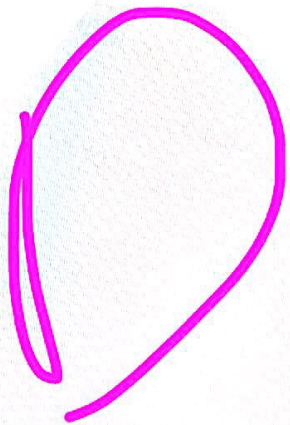
Total questions in exam: 40 | Answered: 0

Question No. 25

Given that $f(x) = \log_{\frac{1}{2}}(x + 2)$, then $f(2) =$

- $\frac{1}{4}$
- $\frac{1}{2}$
- 2
- -2



F(x)= log 1/2 (x+2)
F(2) = log 1/2 (2+2)
F(2) = log 1/2 (4)
By calcuator f(2) = -2

D

Total questions in exam: 40 | Answered: 0

Question No. 12

Let a be an integer. Give all values of a such that the function F is a one-to-one function

$$F = \{(7,-1),(5,1-a),(0,5),(-2,a),(1,3)\}$$

- $a \in \mathbb{R}\backslash\{-1,5,3,2\}$
- $a \in \mathbb{R}\backslash\{-1,5,3,2,-4,-2\}$
- $a \in \mathbb{R}\backslash\{5,3,2\}$
- $a \in \{1,5,-2\}$

B

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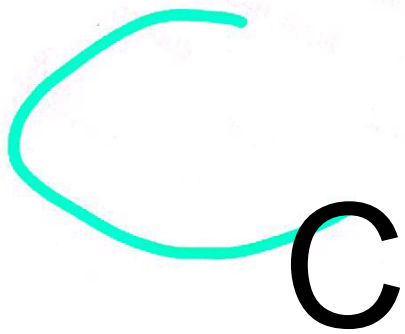
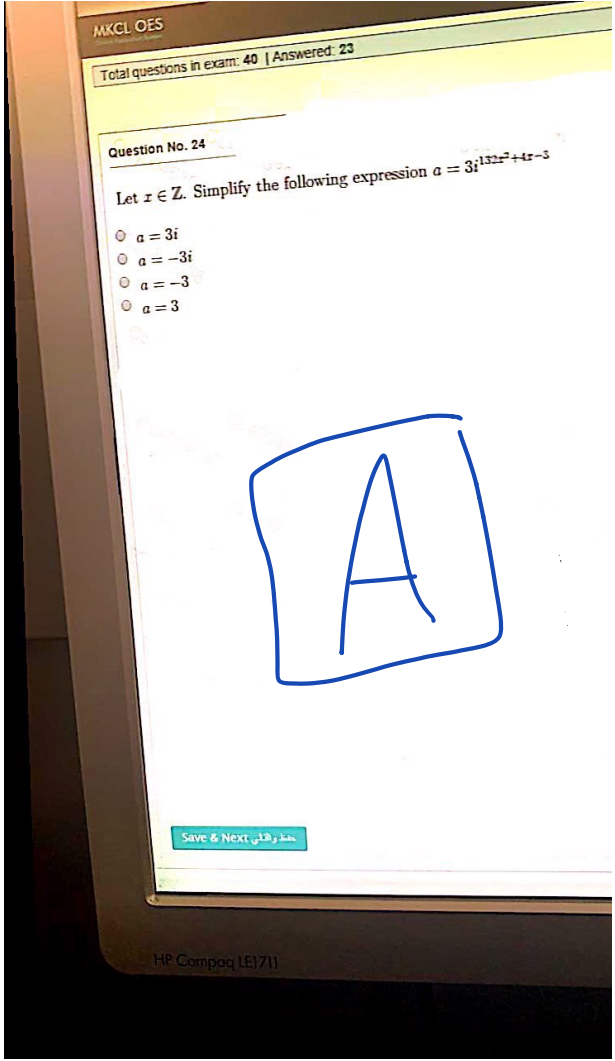
Total questions in exam: **40** | Answered: **0**

Question No. 7

The degree of the polynomial $5x^2+3x-52$ is

- 5
- 3
- 2
- 52

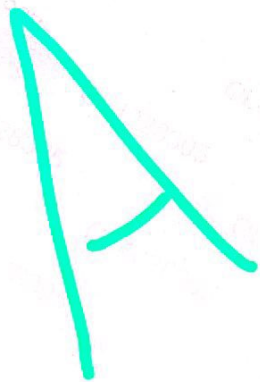




Question No. 11

Factor : $5x^2 - tx^2 - 5z + tz$

- $(x^2 - z)(5 - t)$
- $(x^2 - z)(5 + t)$
- $(x^2 + z)(5 + t)$
- $(x^2 + z)(5 - t)$



A

5x^2 - tx^2 = x^2 (5-t)
-5z + tz = -z (5-t)
then (x^2 - z) (5-t)

Question No. 15

The graph of $f(x) = -3x^2 + x + 4$ is

- Open left
- Open right
- Open down
- Open up

C

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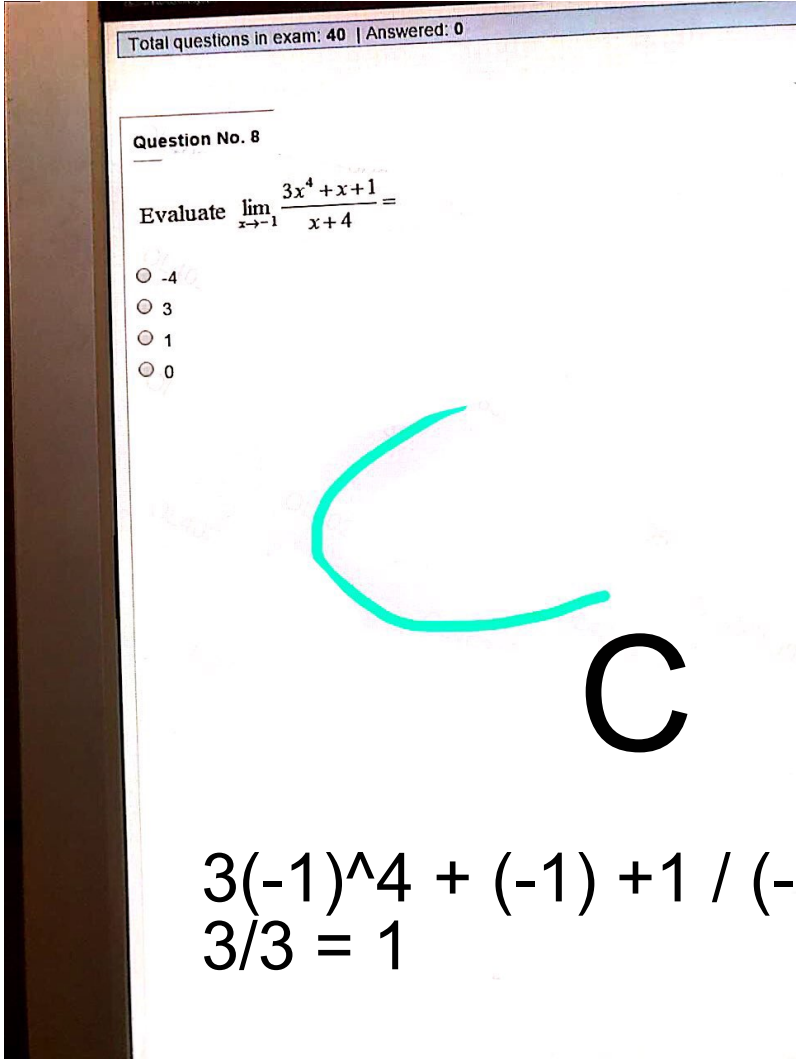
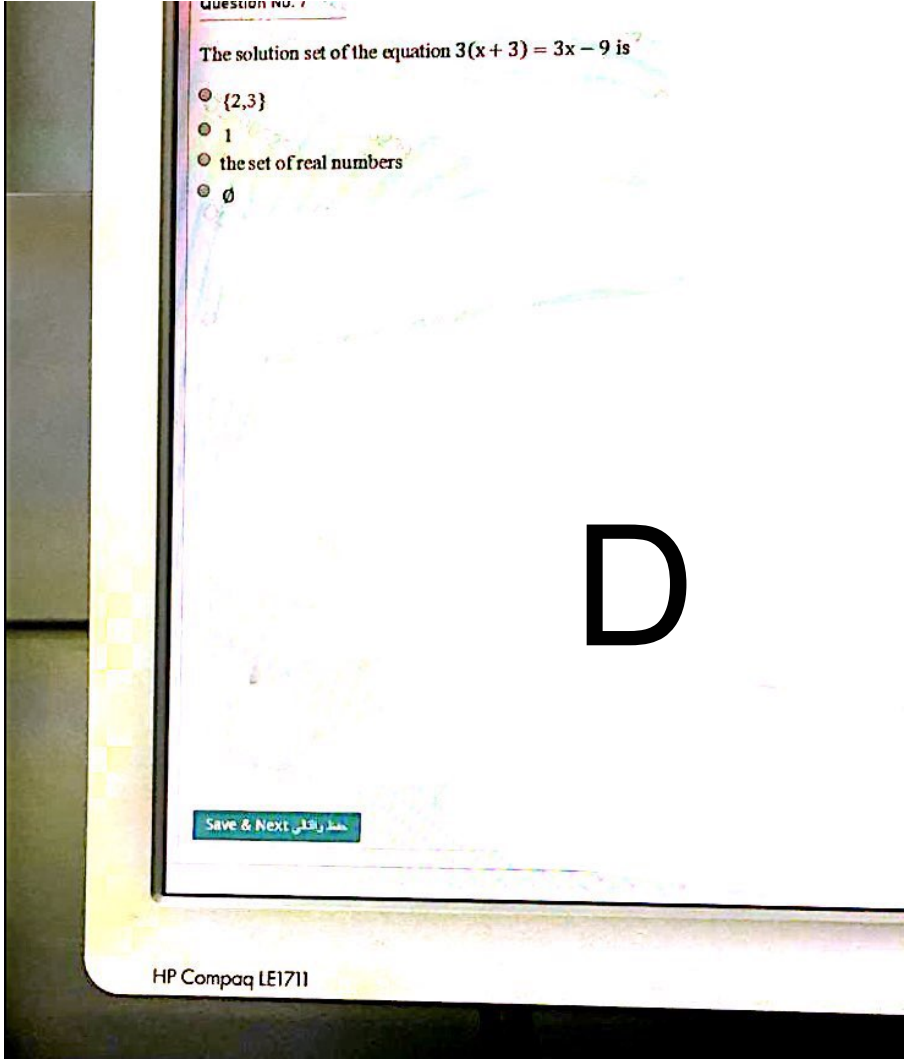


3(-1)^4 + (-1) +1 / (-1+4)
3/3 = 1



Question No. 6

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

- $x - 9$
- $x + 9$
- $x - 3$
- $x + 3$

A

Total questions in exam: 40 | Answered: 17

Question No. 18

Which of the following is a pair of inverse functions?

- $f(x) = 2x - 1$, *where* $x \in \mathbb{R}$, and $g(x) = x + \frac{1}{2}$, *where* $x \in \mathbb{R}$.
- $f(x) = \sqrt{3+x}$, *where* $x \in [-3, \infty)$, and $g(x) = x^2 - 3$, *where* $x \in [0, \infty)$.
- $f(x) = x$, *where* $x \in \mathbb{R}$, and $g(x) = -x$, *where* $x \in \mathbb{R}$.
- $f(x) = \sqrt{3+x}$, *where* $x \in [-3, \infty)$, and $g(x) = x^2 + 3$. *where* $x \in [0, \infty)$.

B

x = √3+y
x^2 = 3+y
x^2−3 = y

x = y^2 - 3
x+3 = y^2
√x+3 = y or
√3+x = y

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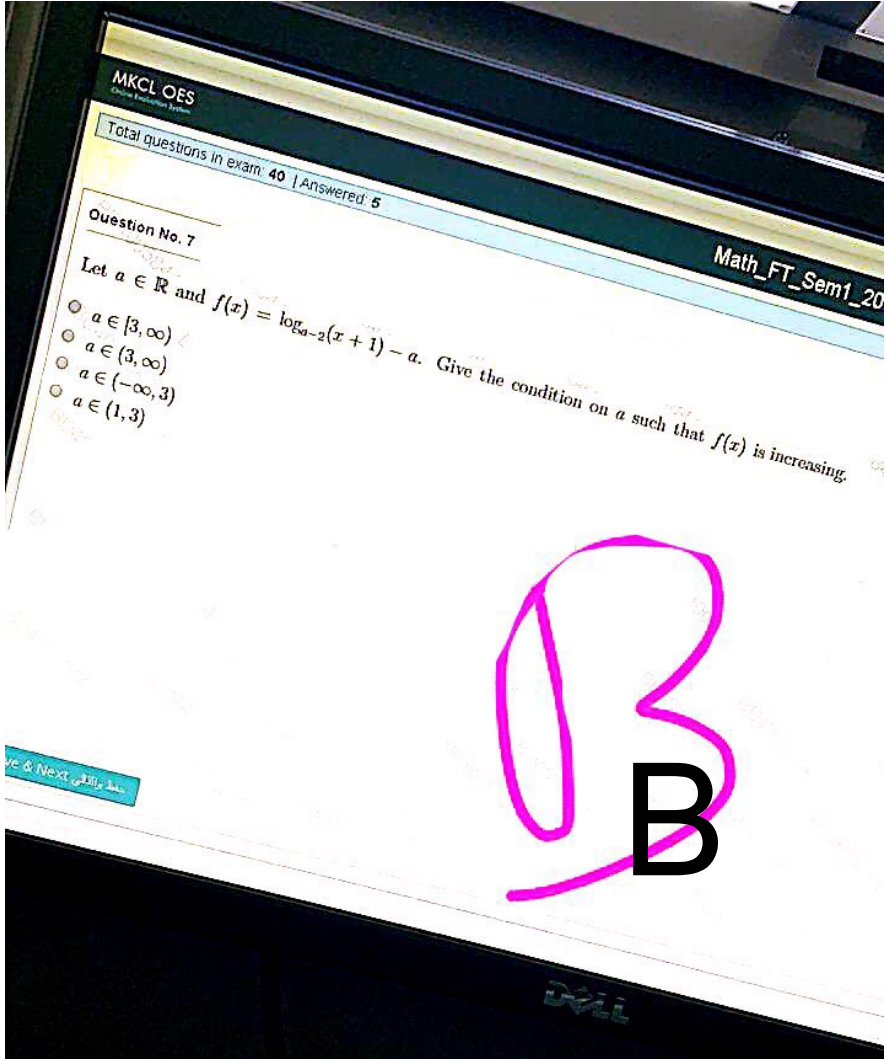
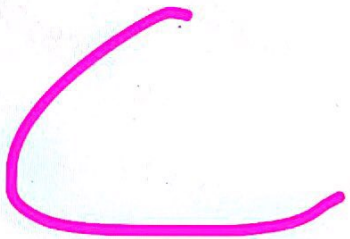
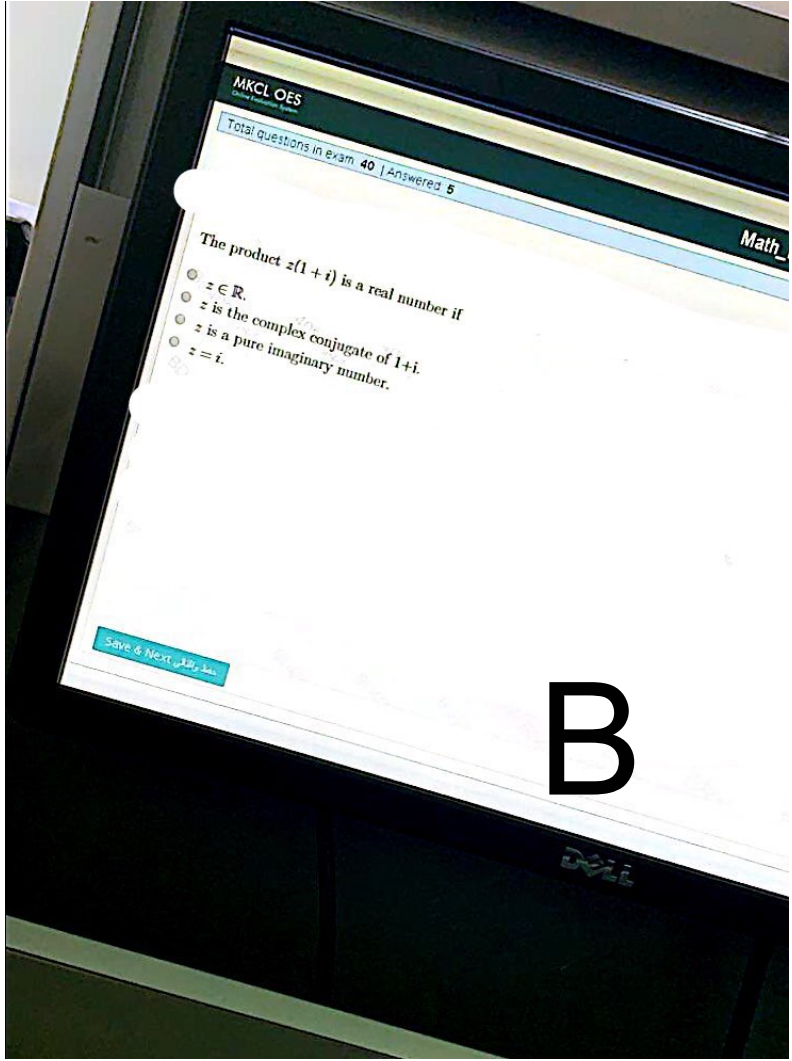


The function has an inverse if

- None of these answers
- doesn't satisfy the horizontal line test
- it is one-to-one
- it is quadratic



C



Question No. 24

If x-2 is a factor of the polynomial f(x) then

- $f(-2) = 0$
- $f(2) = 0$
- $f(0) = -2$
- $f(0) = 2$

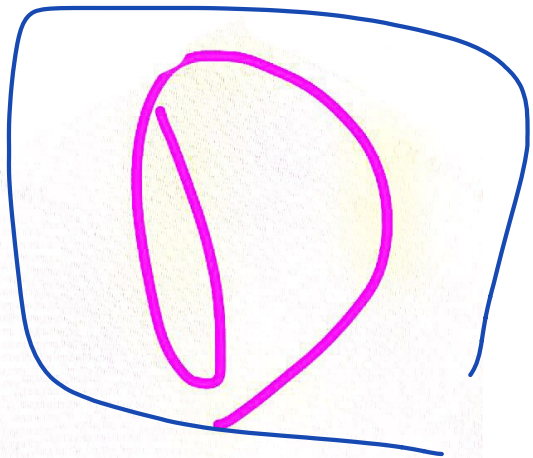
B

Total questions in exam: 40 | Answered: 0

Question No. 25

Given that $f(x) = \log_{\frac{1}{2}}(x + 2)$, then $f(2) =$

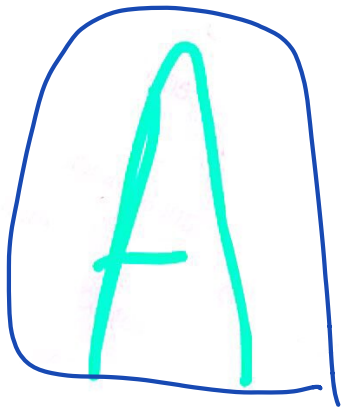
- $\frac{1}{4}$
- $\frac{1}{2}$
- 2
- -2



Question No. 6

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

- $x - 9$
- $x + 9$
- $x - 3$
- $x + 3$

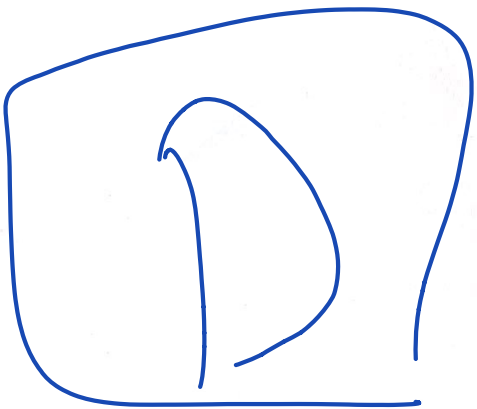


Total questions in exam: **40** | Answered: **0**

Question No. 2

The function $f(x)=\begin{cases} x^4 & \text{if } x\le 1 \\ k-x^4 & \text{if } x>1 \end{cases}$ is continuous if

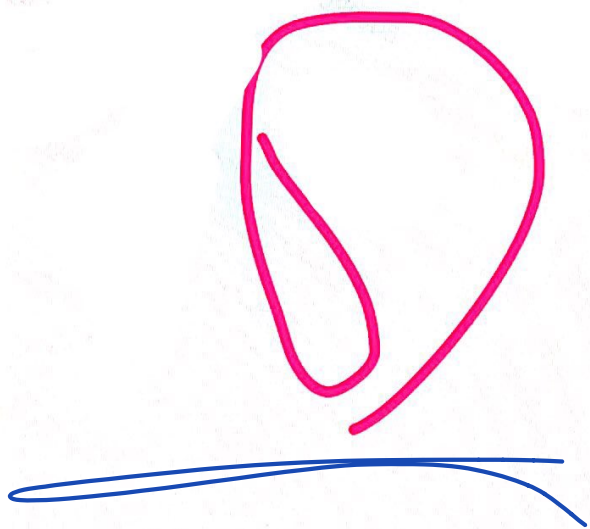
- k=-1
- k=1
- k=0
- k=2



Question No. 23

Evaluate $\lim_{x \to -3} \frac{|x+3|}{x+3}$

- 0
- 2
- 1
- Does not exist



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Total questions in exam: **40** | Answered: **0**

Question No. 33

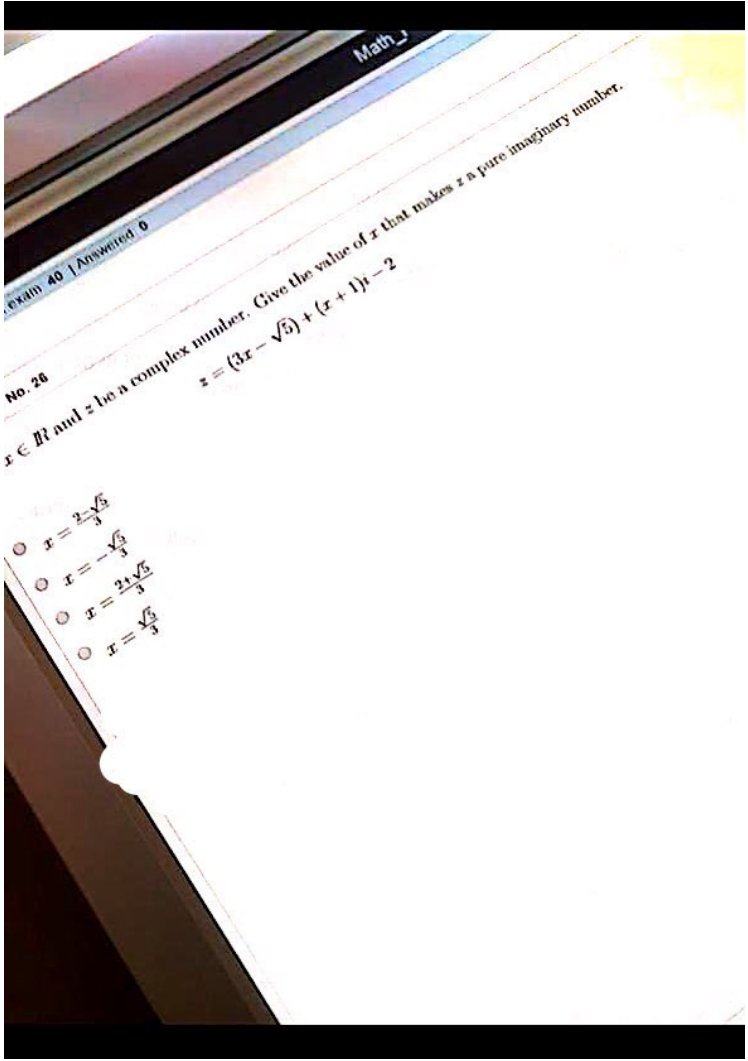
Give the slope of the line 4y - 8x + 28 = 0

- -2
- -7
- 2
- 7

$$\text{Slope} = \frac{-A}{B} = \frac{-(-8)}{4} = 2$$

C

Save & Next



Total questions in exam: 40 | Answered: 1

Question No. 2

Suppose $a \in \mathbb{R}$. Give the value of a such that the equation $|2x + 3| = |x + a|$ has one solution.

- $a = -\frac{2}{3}$
- $a = -\frac{3}{2}$
- $a = \frac{2}{3}$
- $a = \frac{3}{2}$

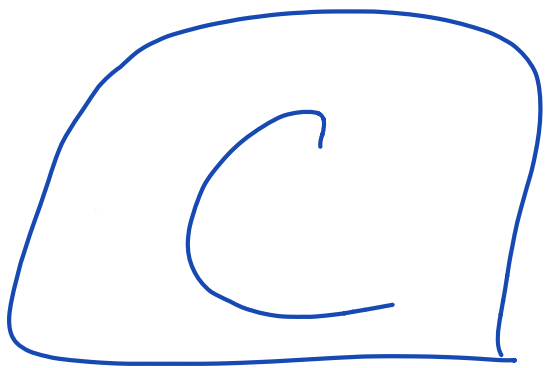
Save & Next

Total questions in exam: 40 | Answered: 13

Question No. 35

If a function $f(x)$ has an inverse function and $f(-2) = 11$, then

- $f^{-1}(11) = -1$
- $f^{-1}(-2) = -11$
- $f^{-1}(11) = -2$
- $f^{-1}(2) = -11$



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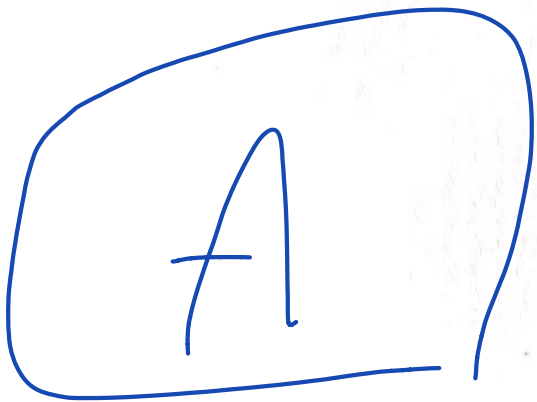
Total questions in exam 40 | Answered. 0

Question No. 32

The solution set of the equation $2\log_2 x - \log_2(4x + 5) = 0$ is

- {5}
- {-1,5}
- ∅
- {-1}



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Total questions in exam: 40 | Answered: 0

Question No. 36

The solution set of the equation $(\sqrt{2})^{3-5x} = 4^{a+x}$ is

- $\{\frac{1}{2} - \frac{1}{6}a\}$
- $\{\frac{3}{2} - \frac{2}{7}a\}$
- $\{\frac{1}{3} - \frac{4}{9}a\}$
- $\{3 + \frac{4}{9}a\}$

$(\sqrt{2})^{3-5x} = (\sqrt{2})^{4a+4x}$

$3 - 5x = 4a + 4x$

$-5x - 4x = 4a - 3$

$-9x = 4a - 3$

$x = \frac{4a-3}{-9} = \frac{1}{3} - \frac{4}{9}a$

C

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Total questions in exam: **40** | Answered: **0**

Question No. 37

If $\sin\theta = \frac{4}{5}$ then $\cos\theta =$,where $0° < \theta < 90°$

- $\frac{4}{5}$
- $\frac{3}{5}$
- $\frac{5}{4}$
- $\frac{5}{3}$

(1) $\sin^2\theta + \cos\theta^2 = 1$

$\cos\theta = \sqrt{1 - \sin\theta^2}$

$\cos\theta = \sqrt{1 - \frac{16}{25}}$

$\cos\theta = \frac{3}{5}$ → B

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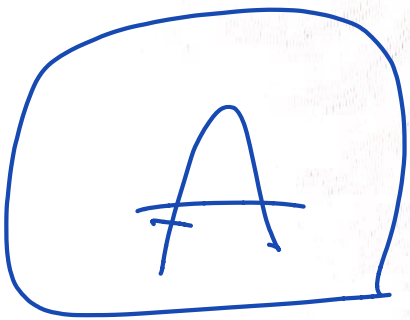
Math_FT

Total questions in exam: 40 | Answered: 0

Question No. 35

Evaluate $\lim_{x \to -\infty} \frac{x^3+x^2-1}{x^2-x-1} =$

- $-\infty$
- 0
- -1
- 1



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Math_FT_

Total questions in exam: **40** | Answered: **0**

Question No. 34

Evaluate $\lim_{x \to 1^+} \frac{x^2 - 1}{|x - 1|}$

- 2
- 6
- -2
- 1

$$\frac{(x-1)(x+1)}{x-1} = x+1$$

$$= 1+1$$

$$= 2$$

A

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Total questions in exam: 40 | Answered: 0

Question No. 38

The solution set of the equation $\log_2 x + \log_2(2x-1) = 2\log_2(2-x)$ is

- {1,-4}
- {1}
- {4,-1}
- φ

$\log_2 x \cdot (2x-1) = \log_2 (2-x)^2$

$2x^2 - x = 4 - 4x + x^2$

$-x^2 \qquad -x^2$

$x^2 = 4 - 4x + x$

$x^2 = 4 - 3x$

$x^2 + 3x - 4 = 0$

$x = 1, \quad x = -4$

A

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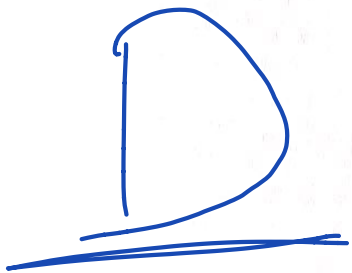
Total questions in exam: **40** | Answered: **0**

Question No. 31

Evaluate $\lim_{x \to 9} \frac{\sqrt{x} - 3}{x - 9} =$

- $-\frac{1}{4}$
- $-\frac{1}{6}$
- $\frac{1}{2}$
- $\frac{1}{6}$



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Total questions in exam: 40 | Answered: 0

Question No. 30

Solve $1 < 7 - x < 10$

- (-6,-3)
- (-3,6)
- (-6,3)
- (3,6)

$1 < 7 - x < 10$

$-6 < -x < 3$

$6 > x > -3$

$(-3, 6)$ → B

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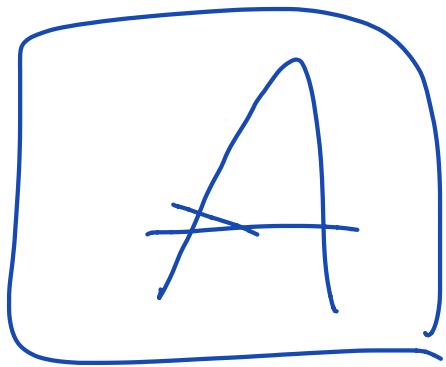
Total questions in exam: 40 | Answered: 0

Question No. 40

The graph of $f(x) = 3^x$ is

- Increasing
- Constant
- Decreasing and Increasing
- Decreasing



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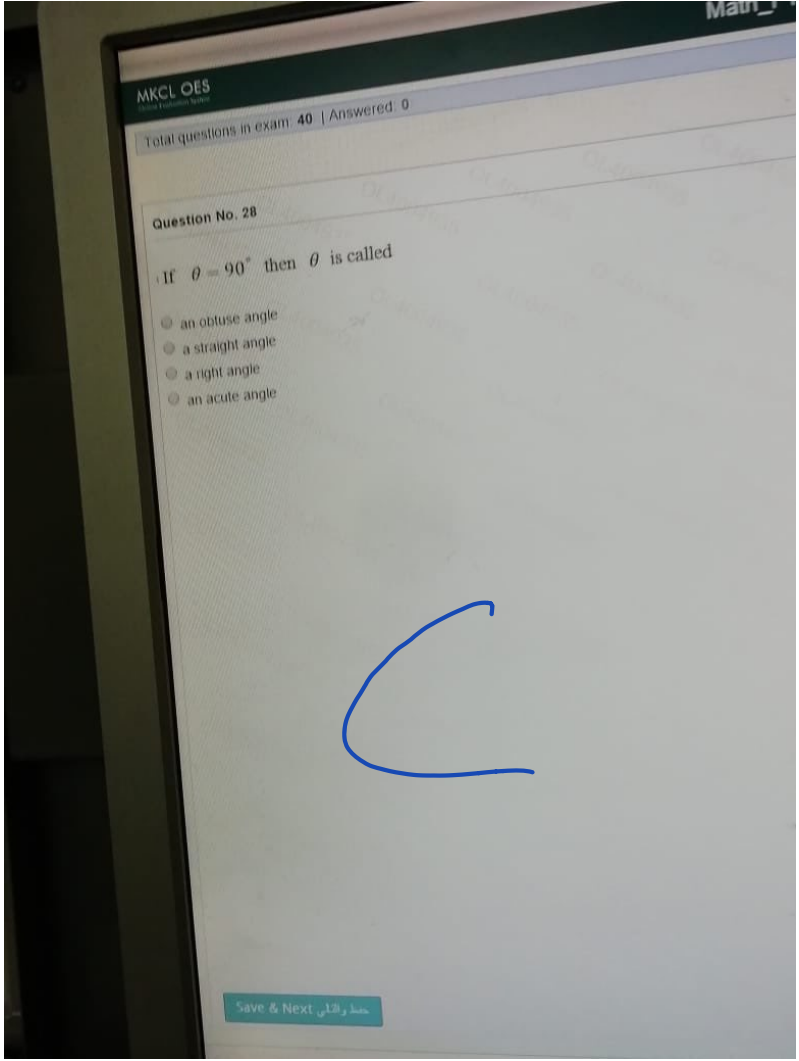
Total questions in exam: 40 | Answered: 0

Question No. 39

The supplement of the angle 50° is:

- 50°
- 150°
- 130°
- 40°

Save & Next



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Total questions in exam: 40 | Answered: 0

Question No. 23

Evaluate: $|-12+(5-2)|$

- 9
- 6
- -3
- 4

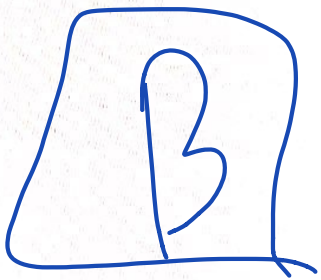
Save & Next

Total questions in exam: 40 | Answered: 0

Question No. 27

Evaluate $\lim_{x \to 1} \left(x^3 + x - 6\right) =$

- 4
- -4
- 0
- -6



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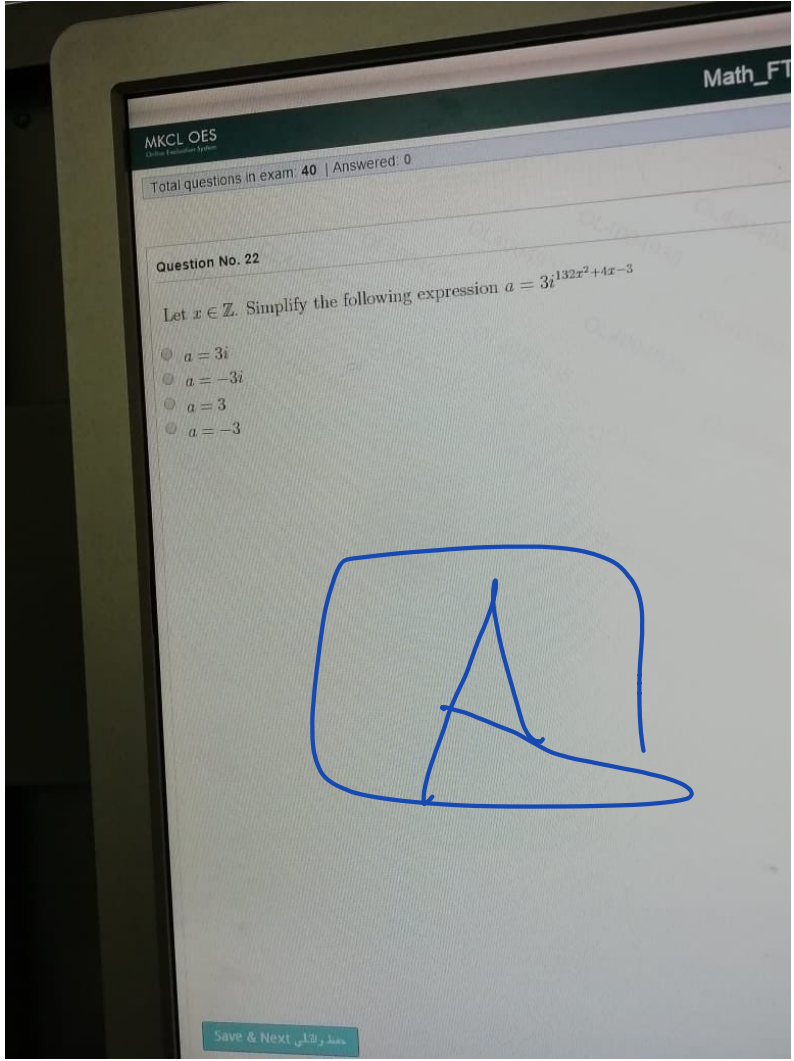
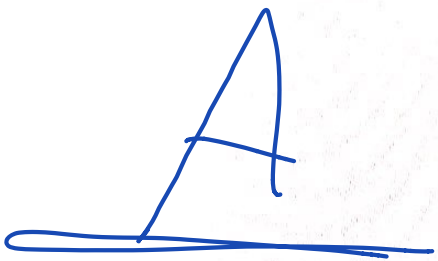


Total questions in exam: 40 | Answered: 0

Question No. 21

The function $f(x)=\begin{cases} kx-k & if \quad x\geq 3 \\ 4 & if \quad x<3 \end{cases}$ is continuous if

- $k=2$
- $k=1$
- $k=3$
- $k=\frac{4}{3}$



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MKCL OES
Online Examination System

Math_FT

Total questions in exam: **40** | Answered: **0**

Question No. 25

Find the quotient $\frac{6x^2}{2x^5} \div \frac{3x}{x^4}$, where $x \neq 0$

- $\frac{1}{3}$
- 1
- $\frac{1}{2}$
- -1

$$\frac{6x^2}{2x^5} \cdot \frac{x^4}{3x} = \frac{2x}{2x} = 1$$

B

Save & Next

MKCL OES

Math_F

Total questions in exam: 40 | Answered: 0

Question No. 24

The equation $y = \log_2(3x)$ can be written as

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

$\log_2 3x = y \Longrightarrow 3x = 2^y$

$x = \frac{2^y}{3}$

A

Save & Next

Total questions in exam: **40** | Answered: **0**

Question No. 8

$\csc\theta =$

- $\frac{1}{\cos\theta}$
- $\frac{\cos\theta}{\sin\theta}$
- $\frac{1}{\sin\theta}$
- $\frac{\sin\theta}{\cos\theta}$

MKCL OES
Online Evaluation System

Total questions in exam: 40 | Answered: 0

Question No. 5

The solution set of the equation $7(2x-1) = 9 + 14x$ is

- 1
- ∅
- {1,2}
- {5}

$14x - 7 = 14x + 9$

$-14x \qquad -14x$

$-7 = 9$

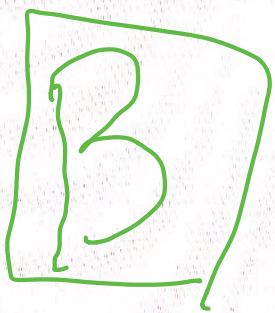
∅ → B

Total questions in exam: **40** | Answered: **0**

Question No. 9

If θ is an acute angle in a right triangle, then $\tan\theta =$

- $\frac{\text{opposite}}{\text{hypotenuse}}$
- $\frac{\text{opposite}}{\text{adjacent}}$
- $\frac{\text{adjacent}}{\text{opposite}}$
- $\frac{\text{adjacent}}{\text{hypotenuse}}$



Total questions in exam: 40 | Answered: 0

Question No. 20

Let U={1,2,3,4,5,6,7}, A={1,3,5,7}, and B={3,4,6}. Find AU B′

- {4, 6}
- {1,2,3,5,7}
- {2,4,3}
- {1,2,3,4}

$A = \{1, 3, 5, 7\}$

$B' = \{1, 2, 5, 7\}$

$A \cup B' = \{1, 2, 3, 5, 7\}$

B

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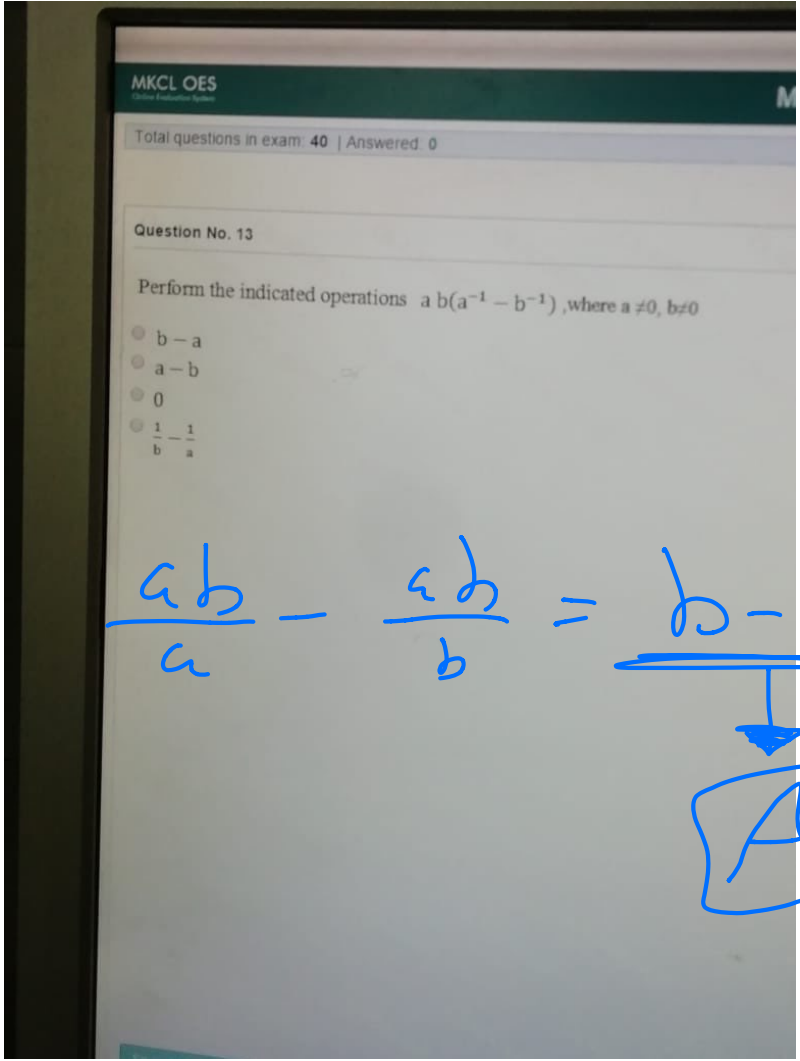
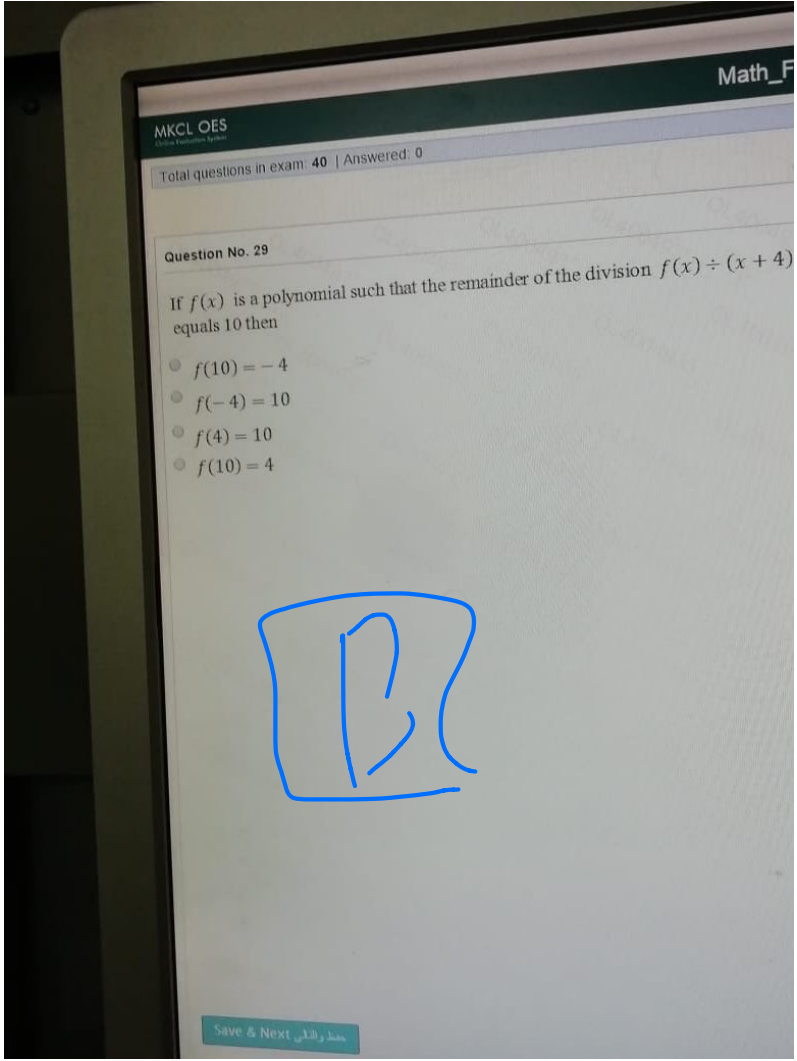


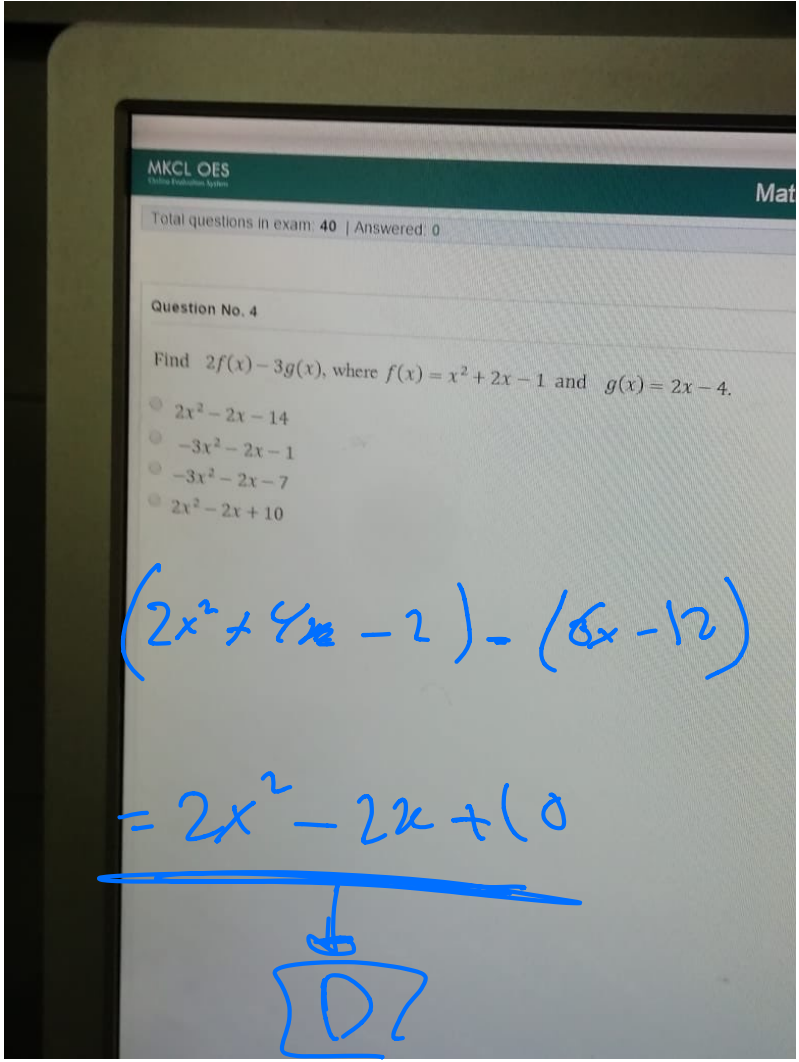


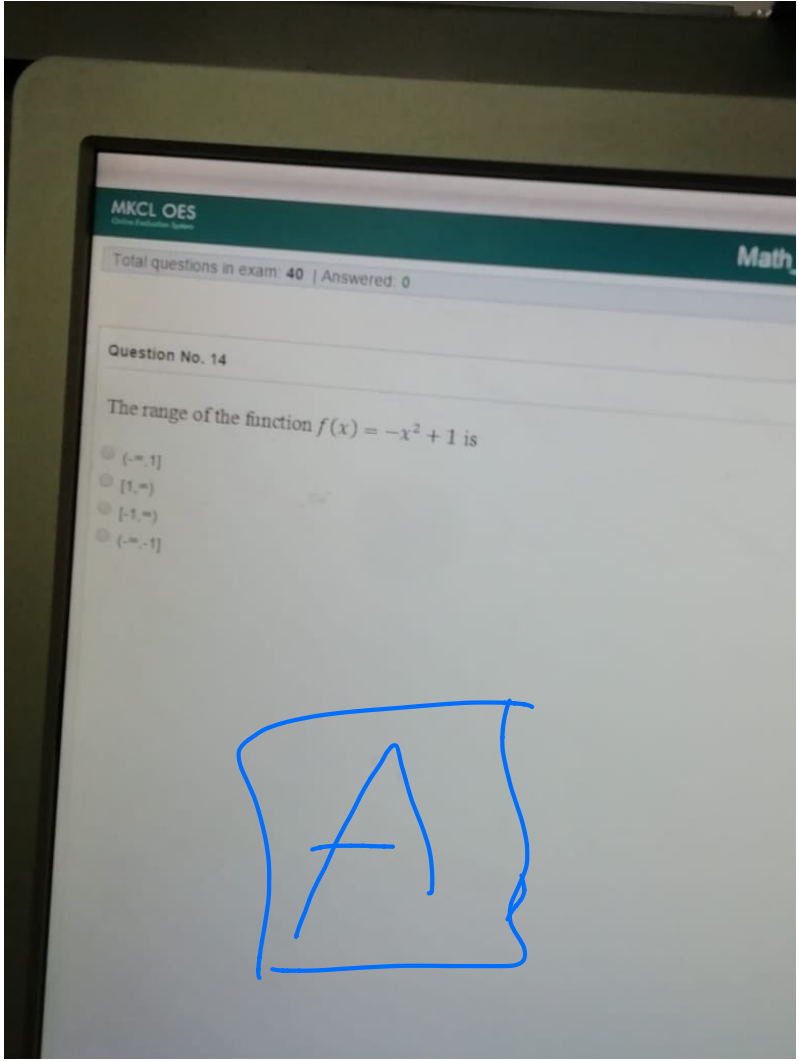
Total questions in exam: 40 | Answered: 0

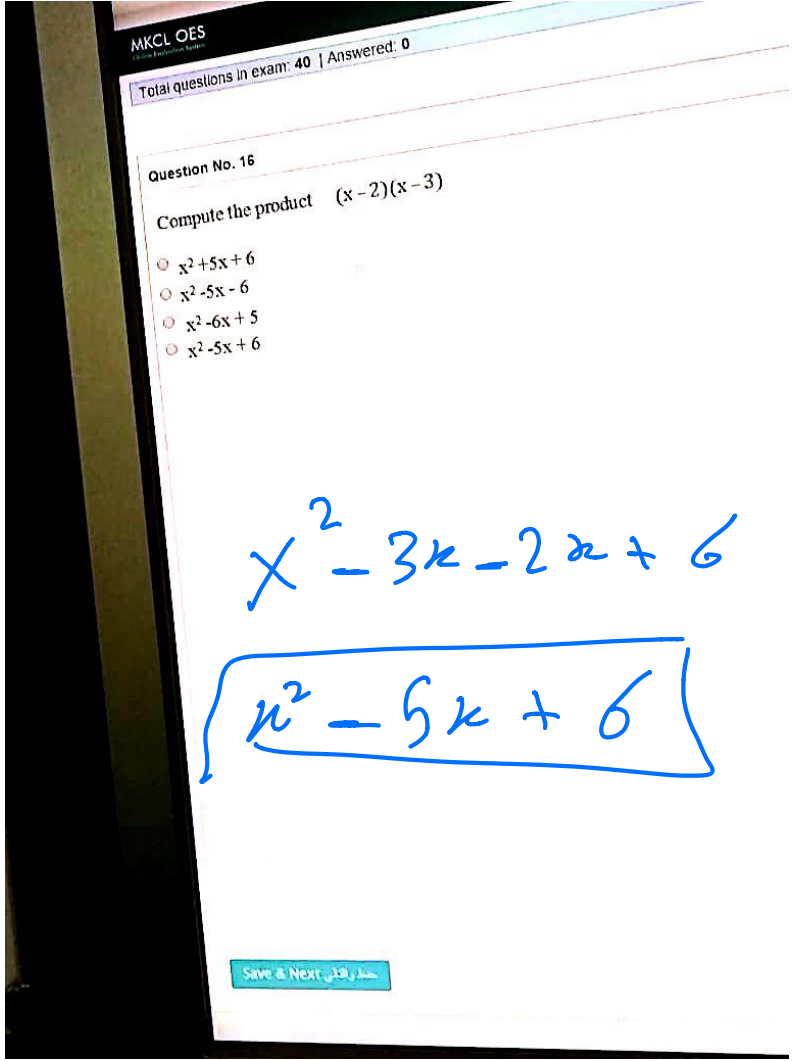
Question No. 3

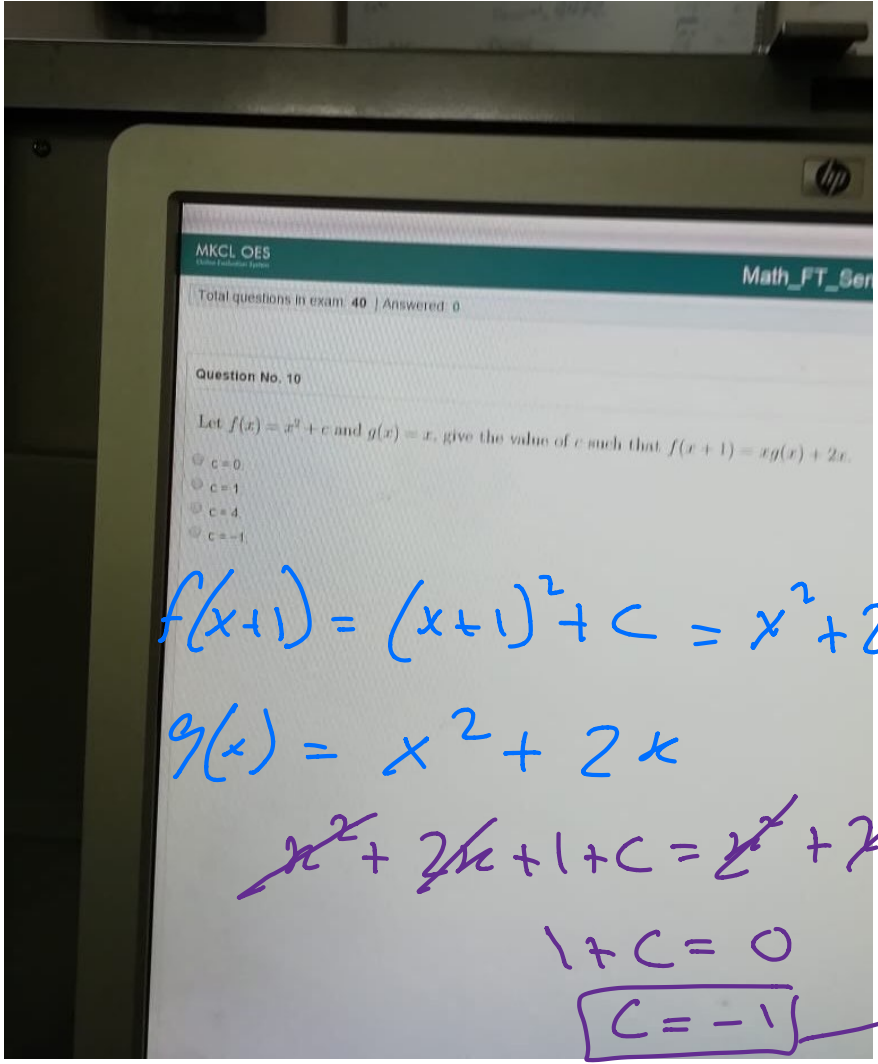
Evaluate $\lim_{x\to\infty}\left(x^4-x^2+x-4\right)=$

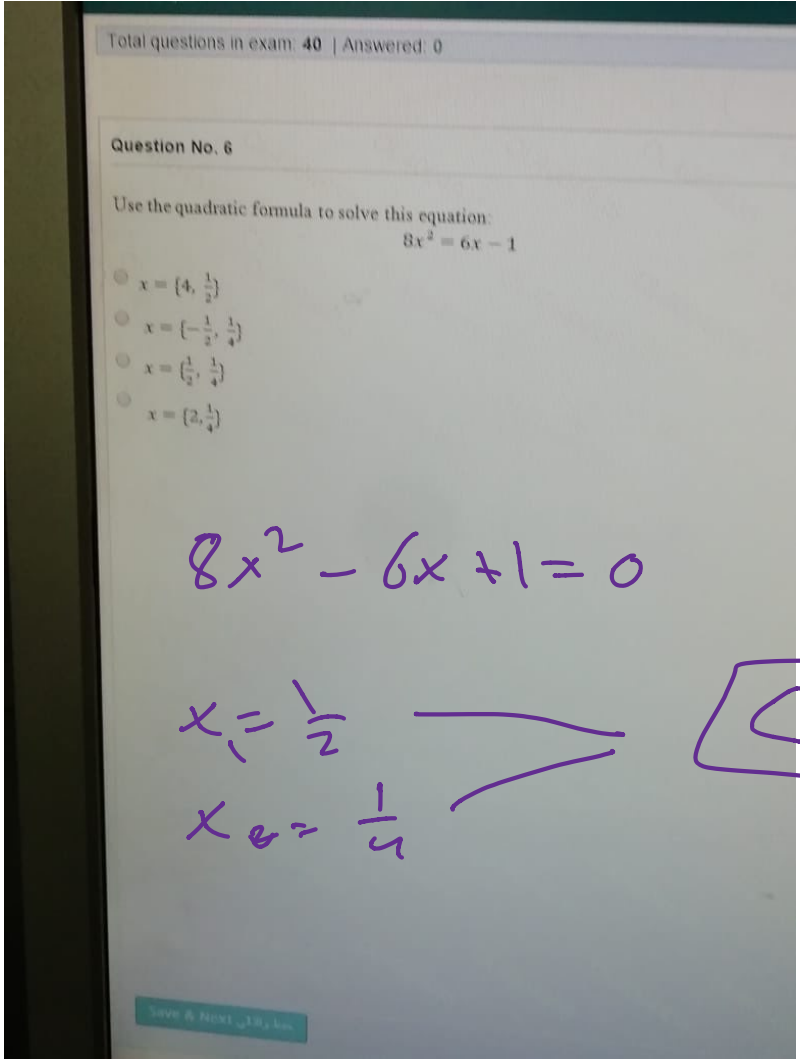
- -4
- 4
- 0
- ∞

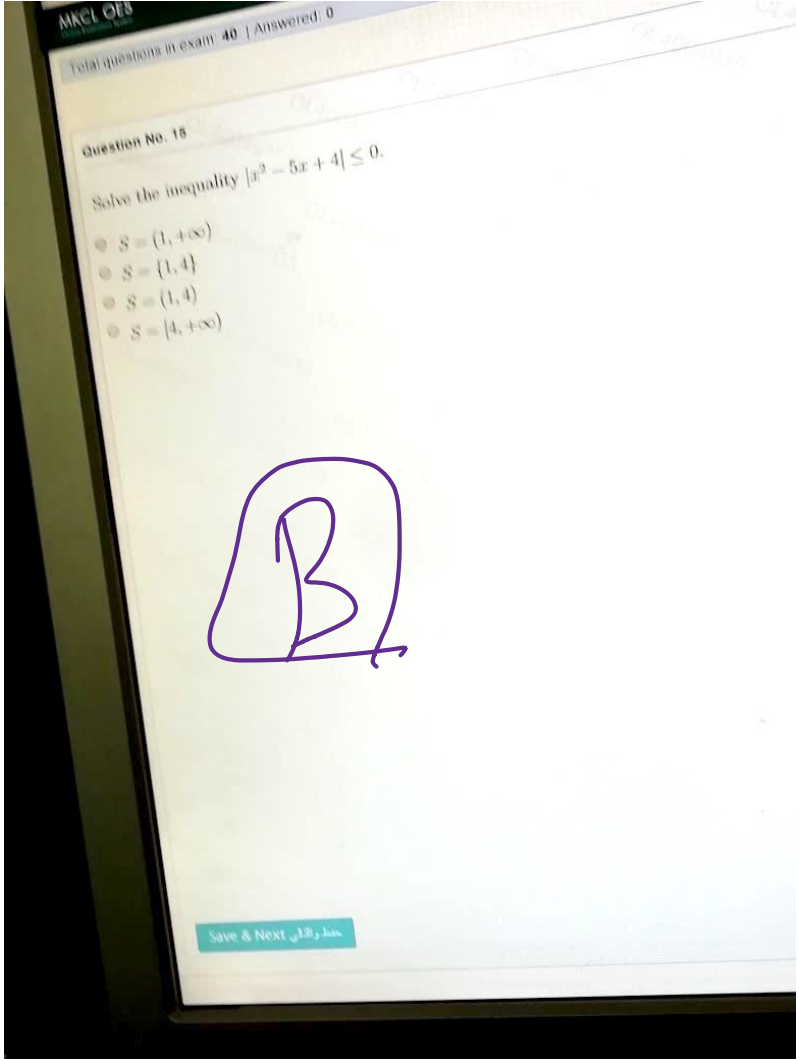












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Total questions in exam: **40** | Answered: **0**

Question No. 11

If x+a is a factor of the polynomial f(x) then

- $f(-a) = 0$
- $f(a) = -a$
- $f(-a) \neq 0$
- $f(a) = 0$

MKCL OES

Total questions in exam: 40 | Answered: 0

Question No. 12

The solution of the equation $2^x = 3^{2x-1}$ is

- $\frac{\ln 3}{\ln 2 - 2\ln 3}$
- $\frac{\ln 2}{\ln 2 - 2\ln 3}$
- $\frac{\ln 2}{2\ln 3 - \ln 2}$
- $\frac{\ln 3}{2\ln 3 - \ln 2}$

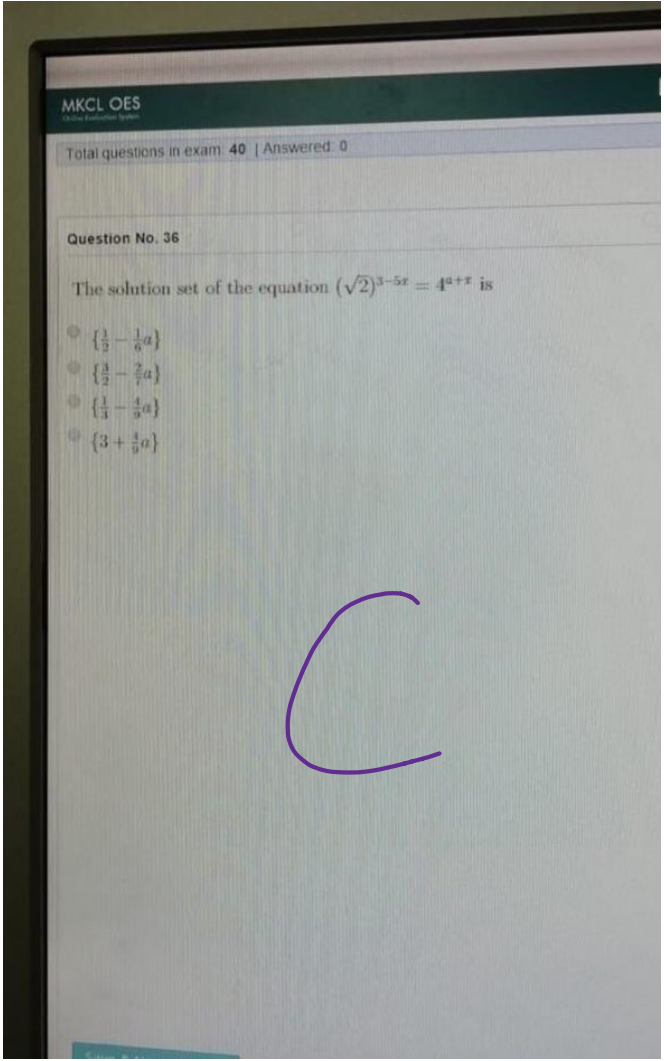
$$\ln 2^x = \ln 3^{2x-1}$$

$$x \ln 2 = 2x \ln 3 - \ln 3$$

$$2x \ln 3 - x \ln 2 = \ln 3$$

$$x(2\ln 3 - \ln 2) = \ln 3$$

$$x = \frac{\ln 3}{2\ln 3 - \ln 2}$$



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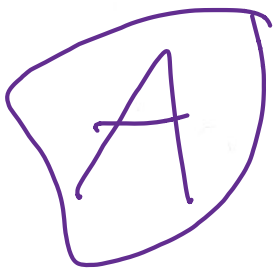
Online Evaluation System

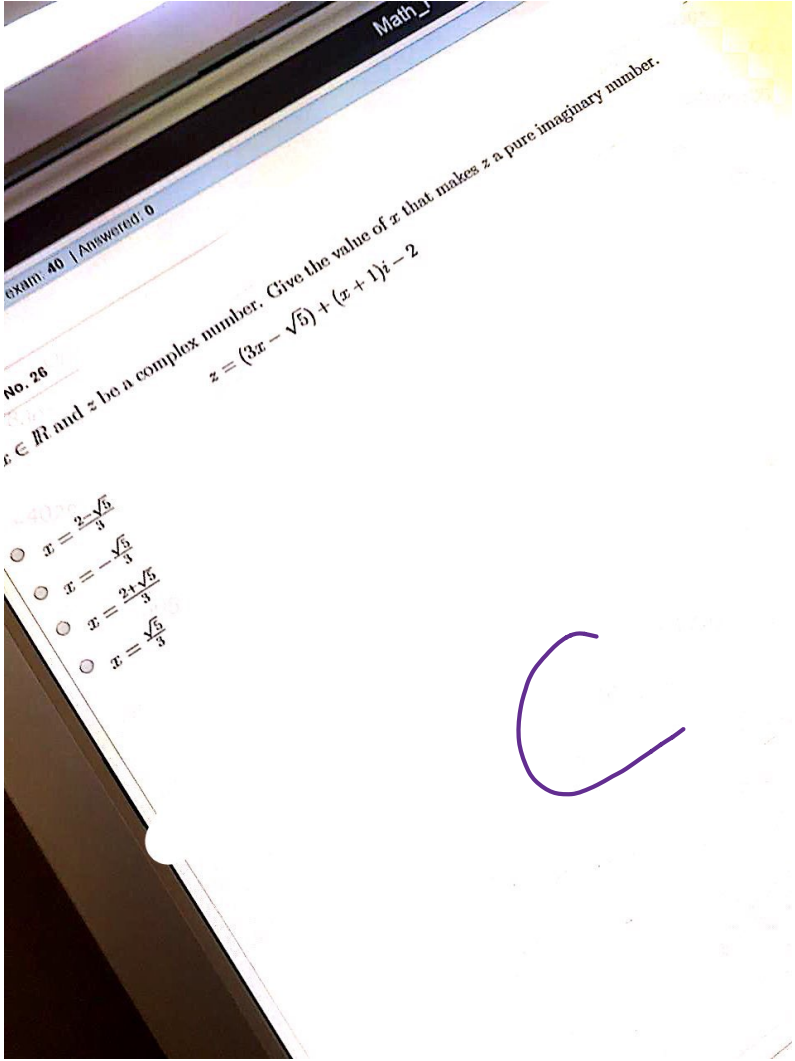
Total questions in exam: **40** | Answered: **0**

Question No. 7

The complement of the angle 65° is:

- 25°
- 115°
- 125°
- 35°





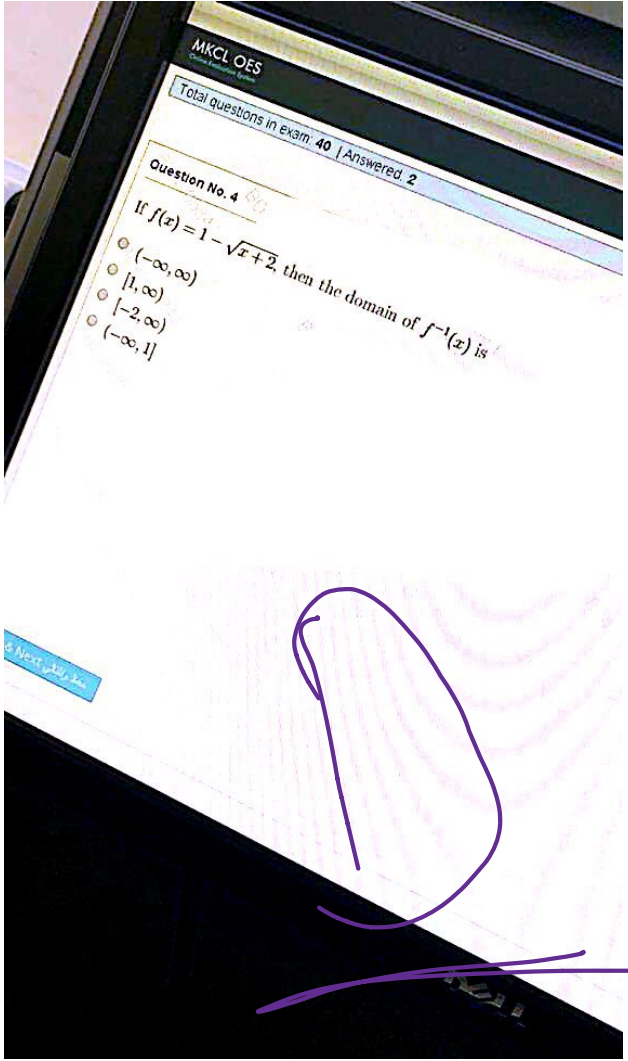
ns in exam: 40 | Answered: 5

Question No.

Suppose $a, b \in \mathbb{R}$ and $b > 0$. The solution of the inequality $0 < |x - a| < b$ is

- $(a-b, a) \cup (a, a+b)$
- $(a-b, a) \cup (a, b)$
- $(-b, a) \cup (a, a+b)$
- $(a-b, a] \cup (a, b)$

A



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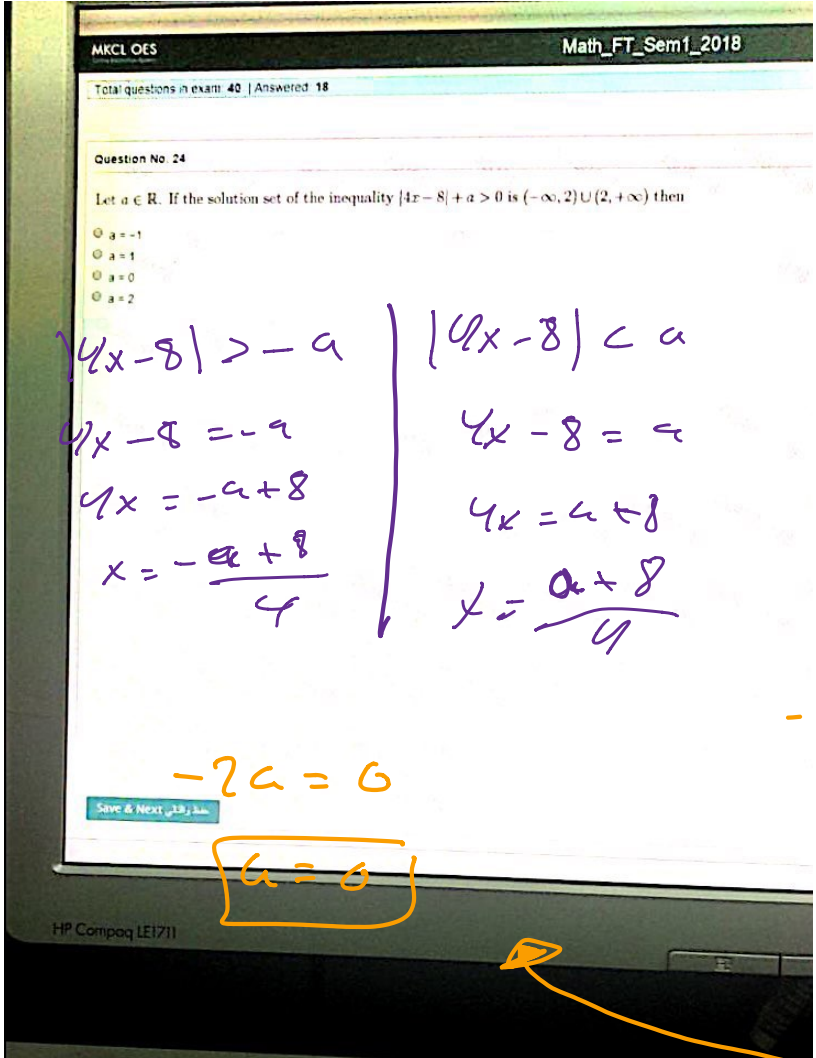
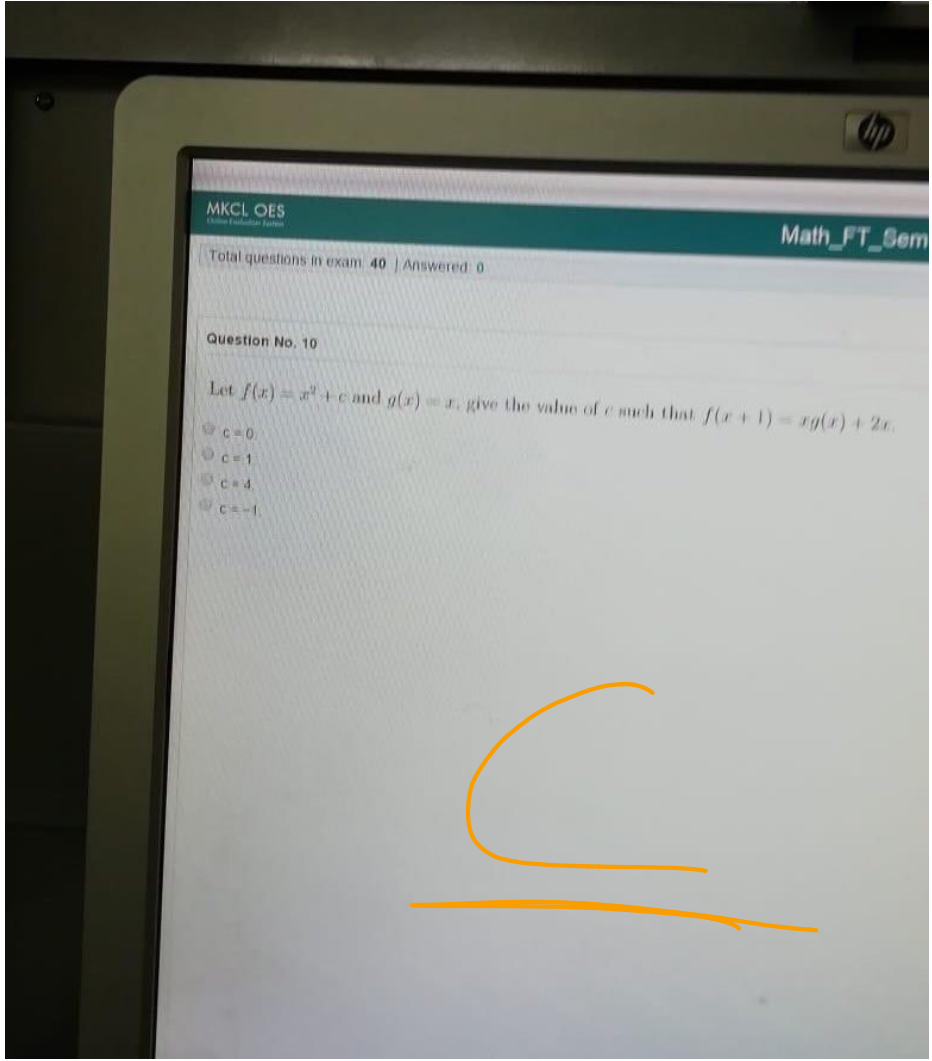
Total questions in exam: 40 | Answered: 7

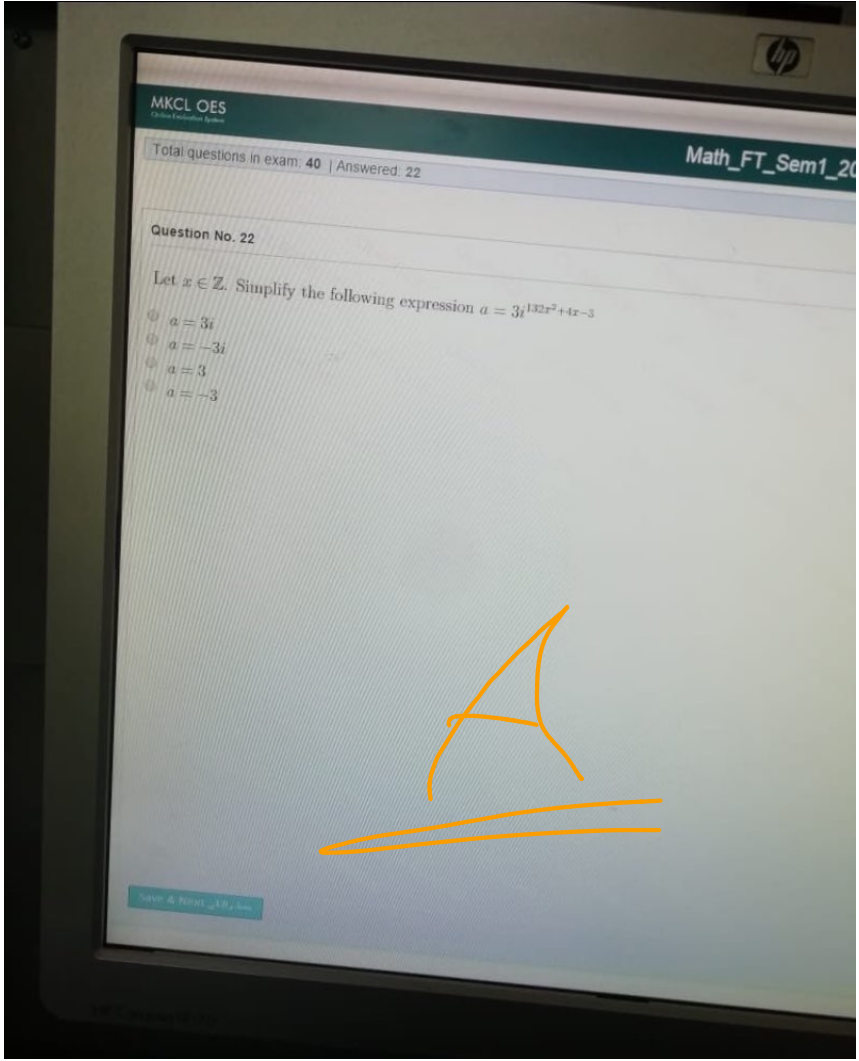
Question No. 27

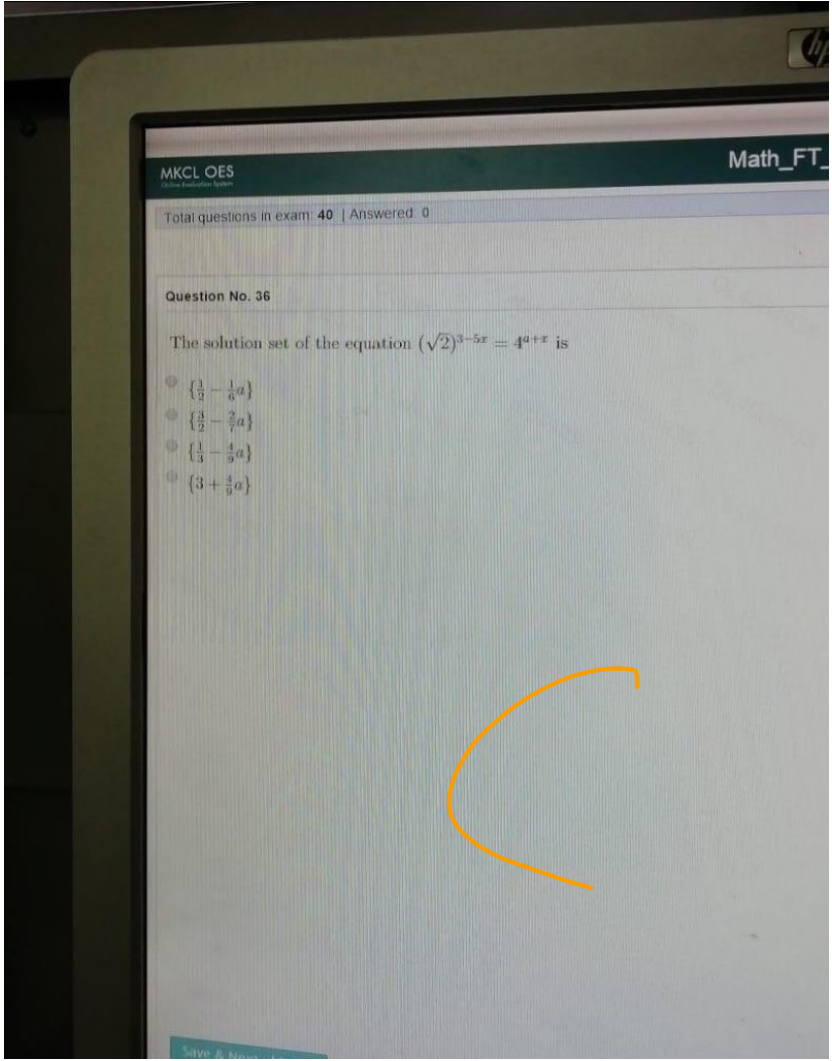
If $f(x) = -\frac{1}{3}x + 1$, the domain of $f^{-1}(x)$ is

- $[-3,1)$
- $[-\frac{1}{3},1)$
- $[0,\infty)$
- all real numbers







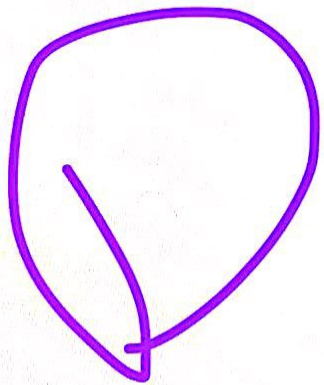


Total questions in exam: 40 | Answered: 0

Question No. 3

Evaluate $\lim_{x\to\infty}\left(x^4-x^2+x-4\right)=$

- -4
- 4
- 0
- ∞



Question No. 24

Let a and b be nonzero real numbers. Find the inverse of the function $f(x) = \frac{a+bx}{b-ax}$.

- $f^{-1}(x) = \frac{bx-a}{ax-b}$
- $f^{-1}(x) = \frac{bx+a}{ax+b}$
- $f^{-1}(x) = \frac{ax+b}{bx-a}$
- $f^{-1}(x) = \frac{bx-a}{ax+b}$

$x = \frac{a+by}{b-ay}$

$xb - xay = a + by$

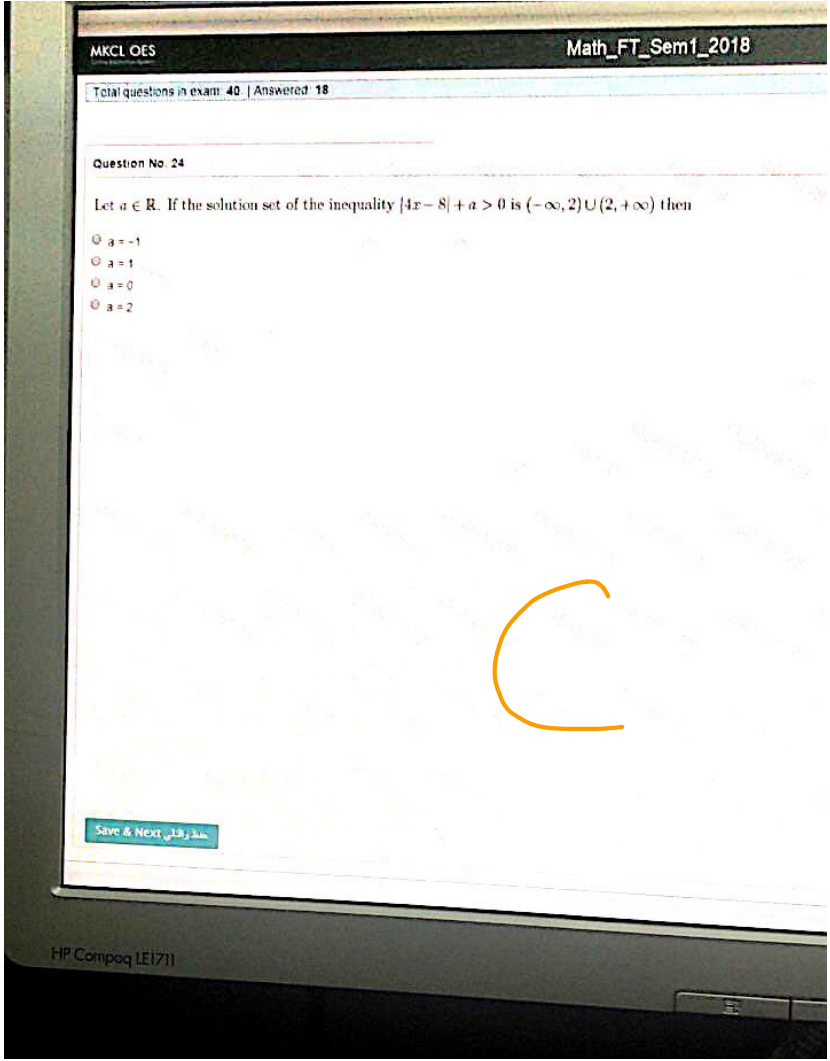
$-xay - by = a - xb$

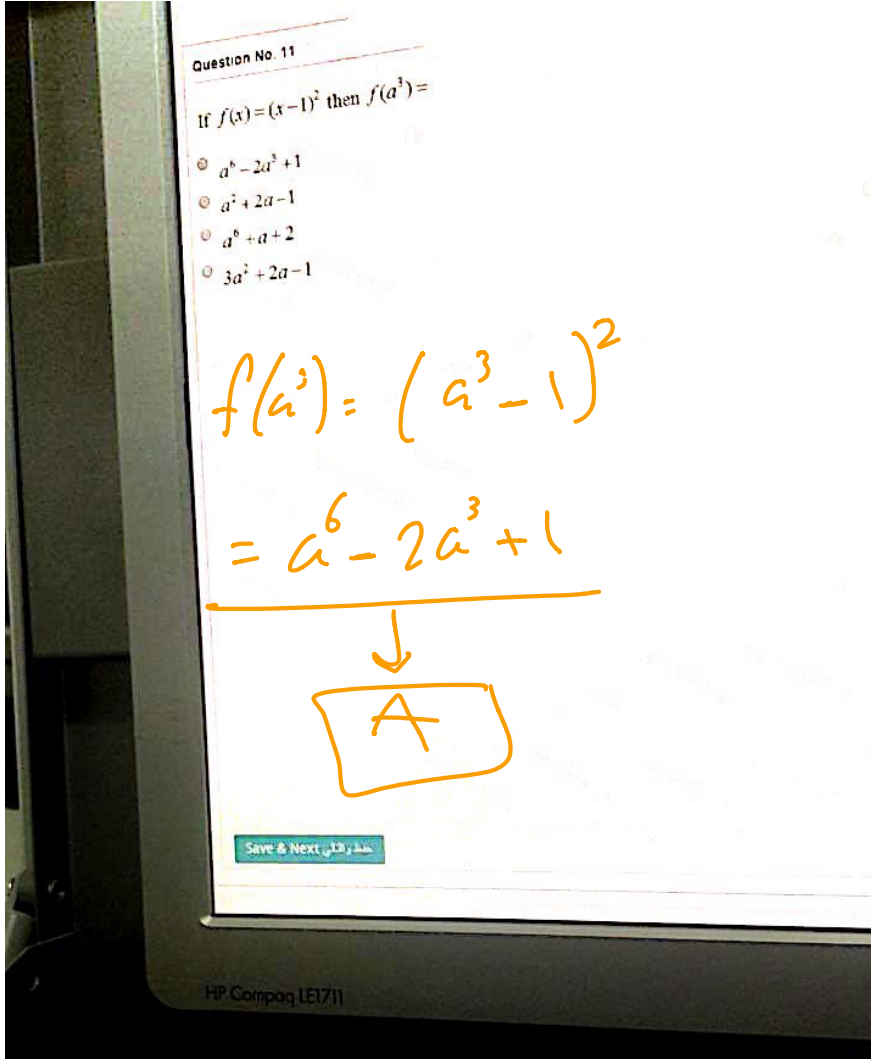
$y(-xa-b) = a - xb$

$y = \frac{a-xb}{-xa-b}$

$y = \frac{xb-a}{xa+b}$.

D





Evaluate $\lim_{x \to -3} \frac{x^2+7x+12}{x+3} =$

- 4
- 1
- -3
- 0

$$\frac{(x+3)(x+4)}{x+3}$$

$x+4$

$-3+4=$ 1

B

Total questions in exam: 40 | Answered: 12

Question No. 30

The supplement of the angle 20° is:

- 70°
- 80°
- 180°
- 160°

11:25 AM

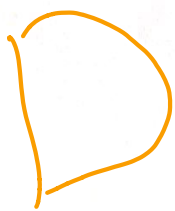
MKCL OES

Total questions in exam: 40 | Answered: 7

Question No. 27

If $f(x) = -\frac{1}{3}x + 1$, the domain of $f^{-1}(x)$ is

- $[-3,1)$
- $[-\frac{1}{3},1)$
- $[0,\infty)$
- all real numbers

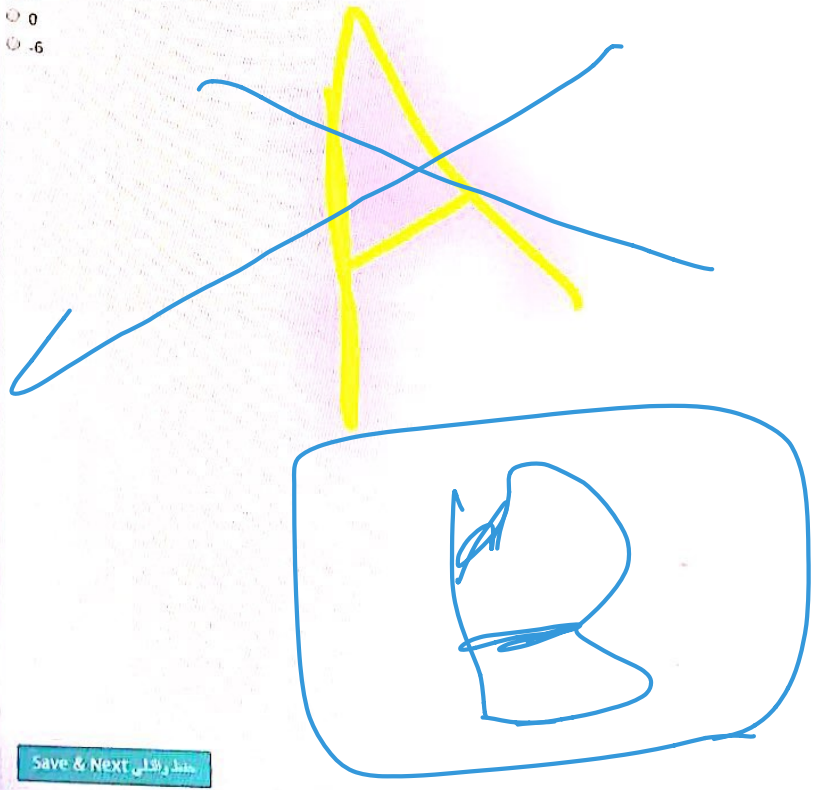


Total questions in exam: **40** | Answered: **0**

Question No. 27

Evaluate $\lim_{x \to 1} (x^2 + x - 6) =$

- 4
- -4
- 0
- -6



Save & Next

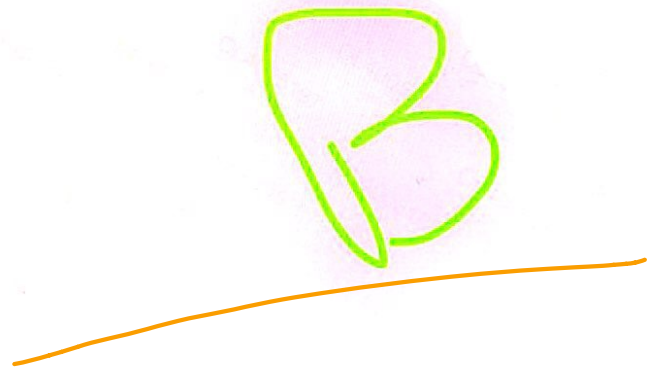
MKCL OES

Total questions in exam: **40** | Answered: **10**

Question No. 36

The function $f(x)$ is constant on an interval I if for $x_1, x_2 \in I$,

- if $x_1 < x_2, then\ f(x_1) < f(x_2)$,
- if $x_1 \neq x_2, then\ f(x_1) = f(x_2)$,
- if $x_1 < x_2, then\ f(x_1) > f(x_2)$,
- if $x_1 > x_2, then\ f(x_1) > f(x_2)$,



MKCL OES

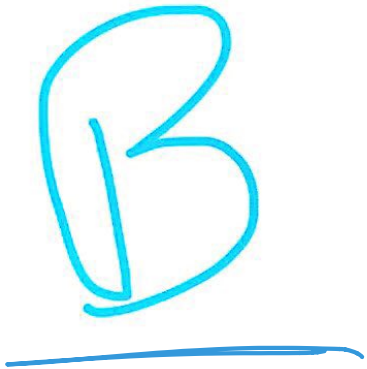
Math_FT_Sem

Total questions in exam: 40 | Answered: 40

Question No. 37

Let $a > 1$. The solution set of the equation $\log_x(2x^2 - a^2) = 2$ is

- S = {a, 2a}
- S = {a}
- S = {-a}
- S = {-a, a}



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MKCL OES

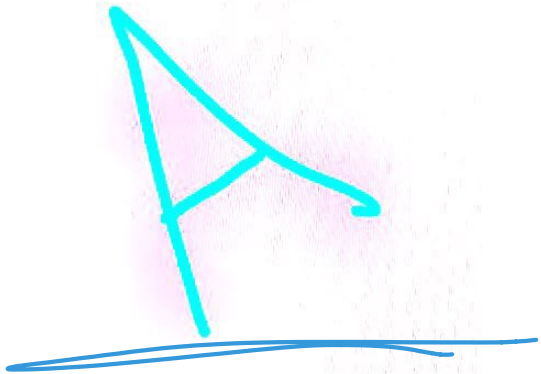
Math_FT

Total questions in exam: 40 | Answered: 0

Question No. 32

The solution set of the equation $2\log_2 x - \log_2(4x + 5) = 0$ is

- {5}
- {-1,5}
- ∅
- {-1}



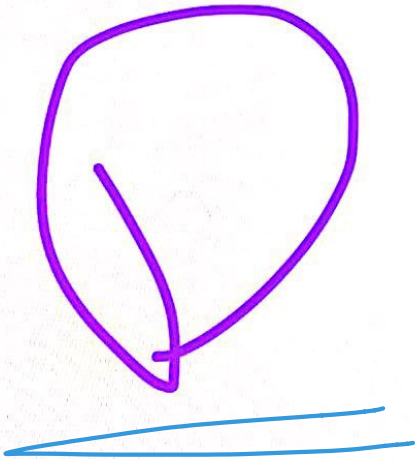
Save & Next جطر وقلي

Total questions in exam: 40 | Answered: 0

Question No. 3

Evaluate $\lim_{x\to\infty}\left(x^4-x^2+x-4\right)=$

- -4
- 4
- 0
- ∞



MKCL OES

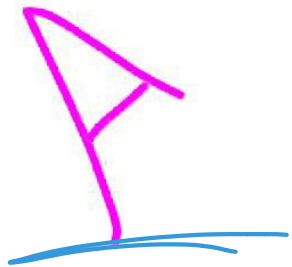
Math_F

Total questions in exam: 40 | Answered: 0

Question No. 24

The equation $y = \log_2(3x)$ can be written as

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



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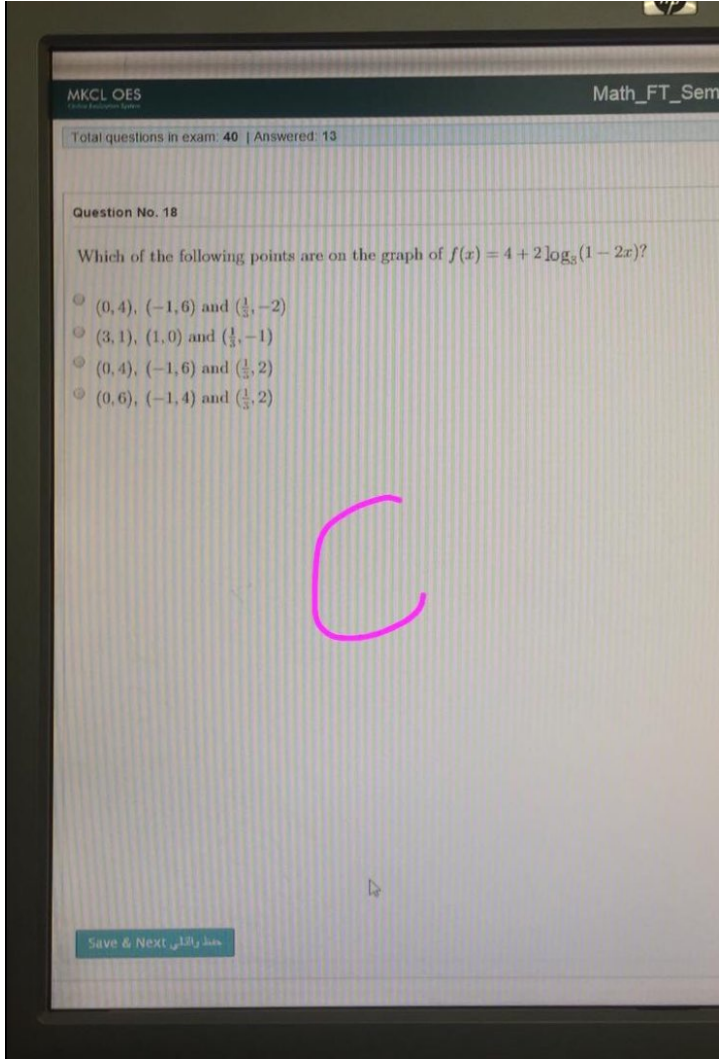


MKCL OES

Math_FT

Total questions in exam: 40 | Answered: 0

Question No. 35

Evaluate $\lim_{x \to -\infty} \frac{x^3+x^2-1}{x^2-x-1} =$

- $-\infty$
- 0
- -1
- 1

A

Save & Next

MKCL OES

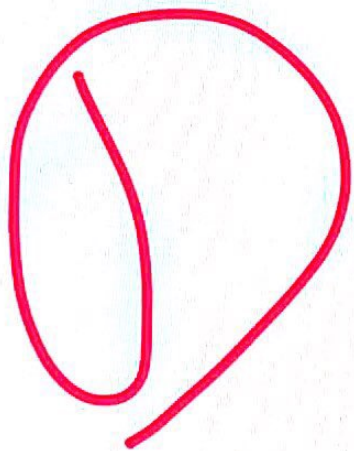
Math_FT_

Total questions in exam: **40** | Answered: **0**

Question No. 31

Evaluate $\lim_{x \to 9} \frac{\sqrt{x} - 3}{x - 9} =$

- $-\frac{1}{4}$
- $-\frac{1}{6}$
- $\frac{1}{2}$
- $\frac{1}{6}$



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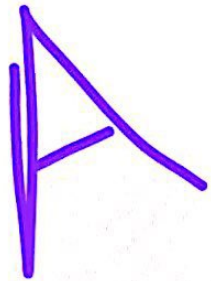
Total questions in exam: 40 | Answered: 0

Question No. 21

The function $f(x)=\begin{cases} kx-k & \text{if } x\geq 3 \\ 4 & \text{if } x<3 \end{cases}$ is continuous if

- $k=2$
- $k=1$
- $k=3$
- $k=\frac{4}{3}$



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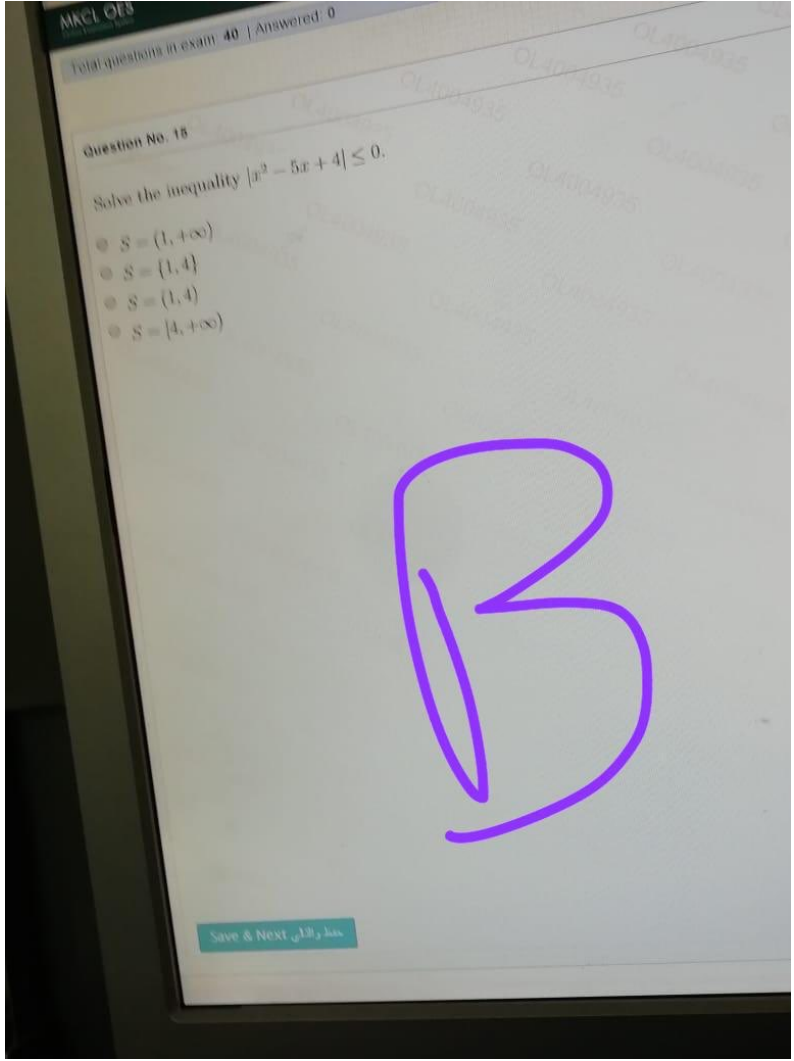
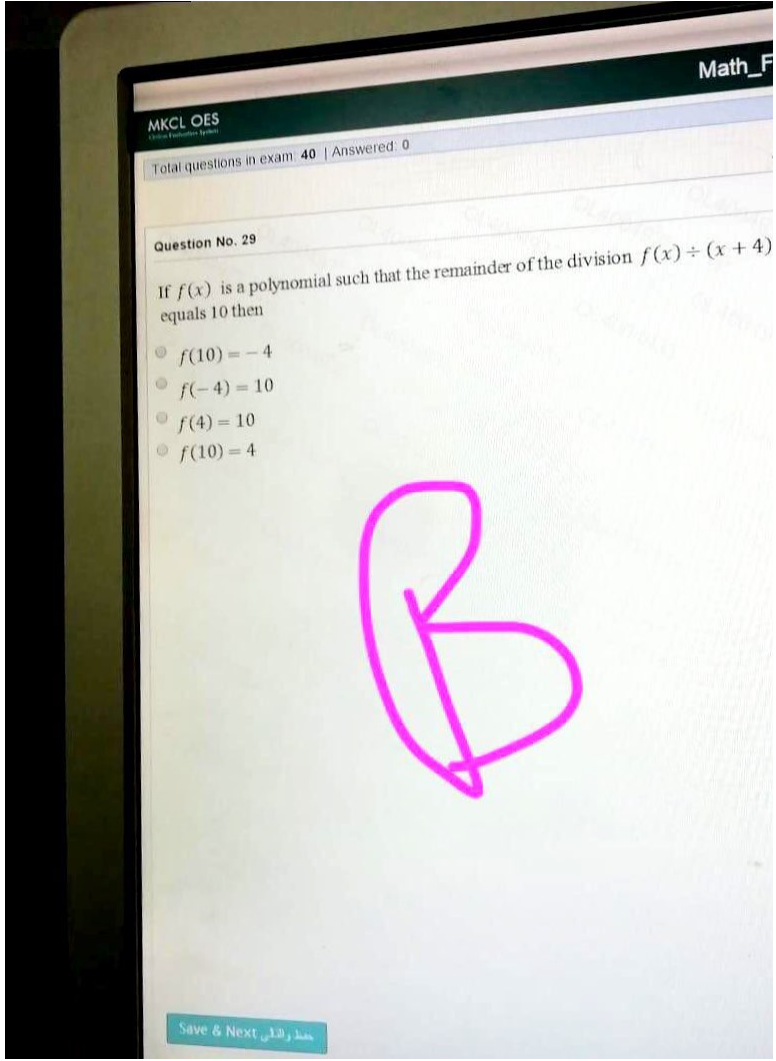
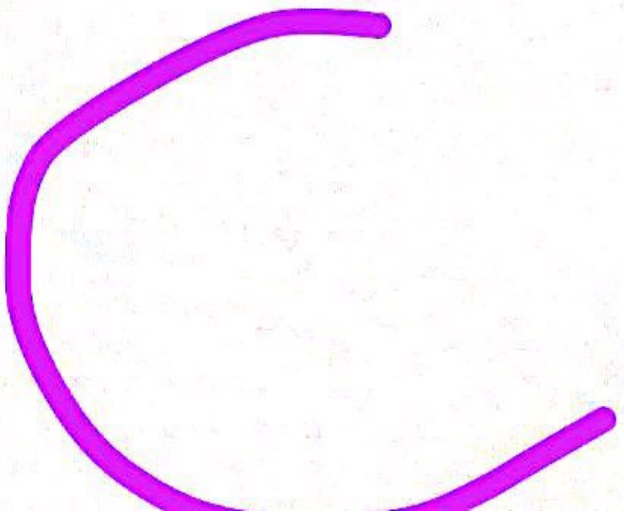




Question No. 24

Let a and b be nonzero real numbers. Find the inverse of the function $f(x) = \frac{a+bx}{b-ax}$.

- $f^{-1}(x) = \frac{bx-a}{ax-b}$
- $f^{-1}(x) = \frac{bx+a}{ax+b}$
- $f^{-1}(x) = \frac{ax+b}{bx-a}$
- $f^{-1}(x) = \frac{bx-a}{ax+b}$



MKCL OES

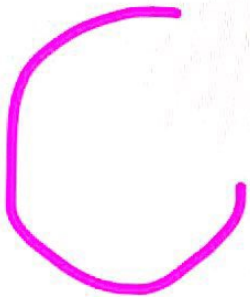
Math_FT_

Total questions in exam: 40 | Answered: 0

Question No. 34

Evaluate $\lim_{x \to 1^+} \frac{x^2 - 1}{|x - 1|}$

- 2
- 6
- -2
- 1



Save & Next

Total questions in exam: 40 | Answered: 35

Question No. 4

Let $a \in \mathbb{R}$ and $f(x) = 0.9^{(a^2-3a+2)x-1} - a$. Give the condition on a such that $f(x)$ is increasing.

- $a \in (2, \infty)$
- $a \in (-\infty, 1)$
- $a \in (1, 2)$
- $a \in (-\infty, 1] \cup [2, \infty)$

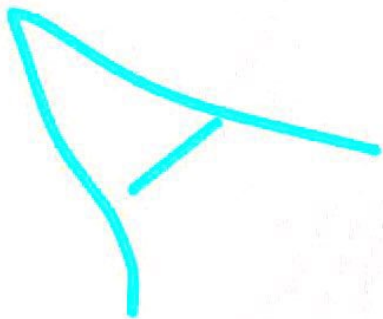
C

Total questions in exam: **40** | Answered: **0**

Question No. 23

Evaluate: $|-12+(5-2)|$

- 9
- 6
- -3
- 4



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Total questions in exam: 40 | Answered: 0

Question No. 5

The solution set of the equation $7(2x-1) = 9 + 14x$ is

- 1
- Ø
- {1,2}
- {5}

B

Question No. 16

Find the value of 'c' that will allow this polynomial to be written as a perfect square.

$$x^2 - x + c$$

- $\frac{1}{2}$
- $\frac{1}{4}$
- 1
- $-\frac{1}{2}$

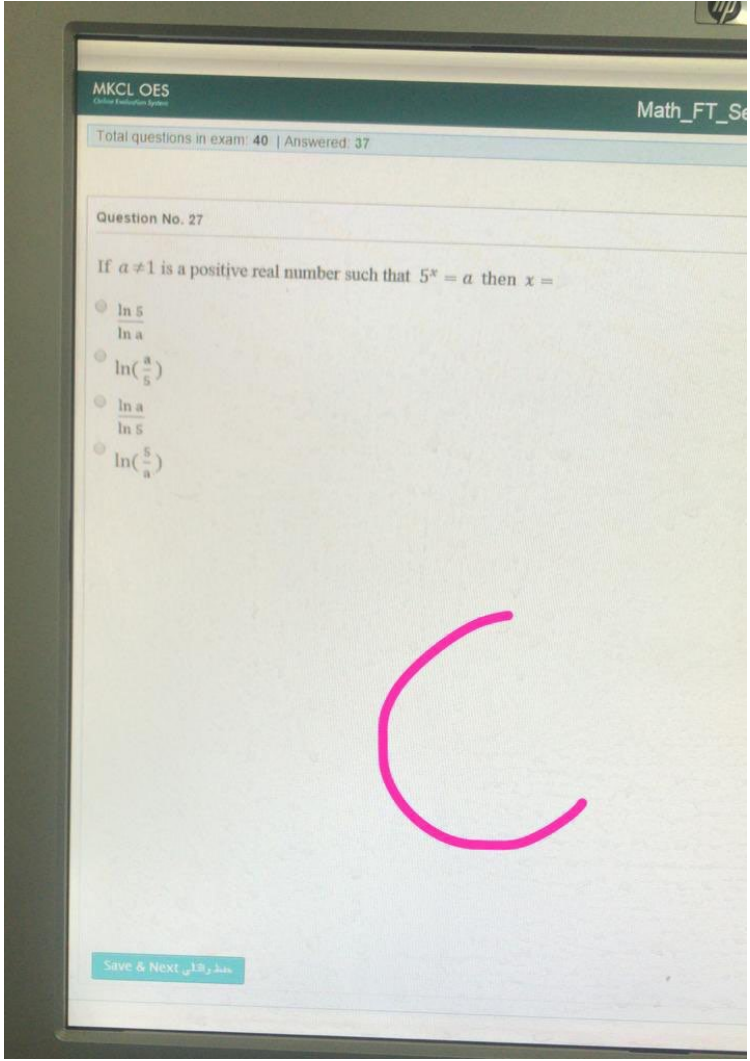
Total questions in exam: **40** | Answered: **0**

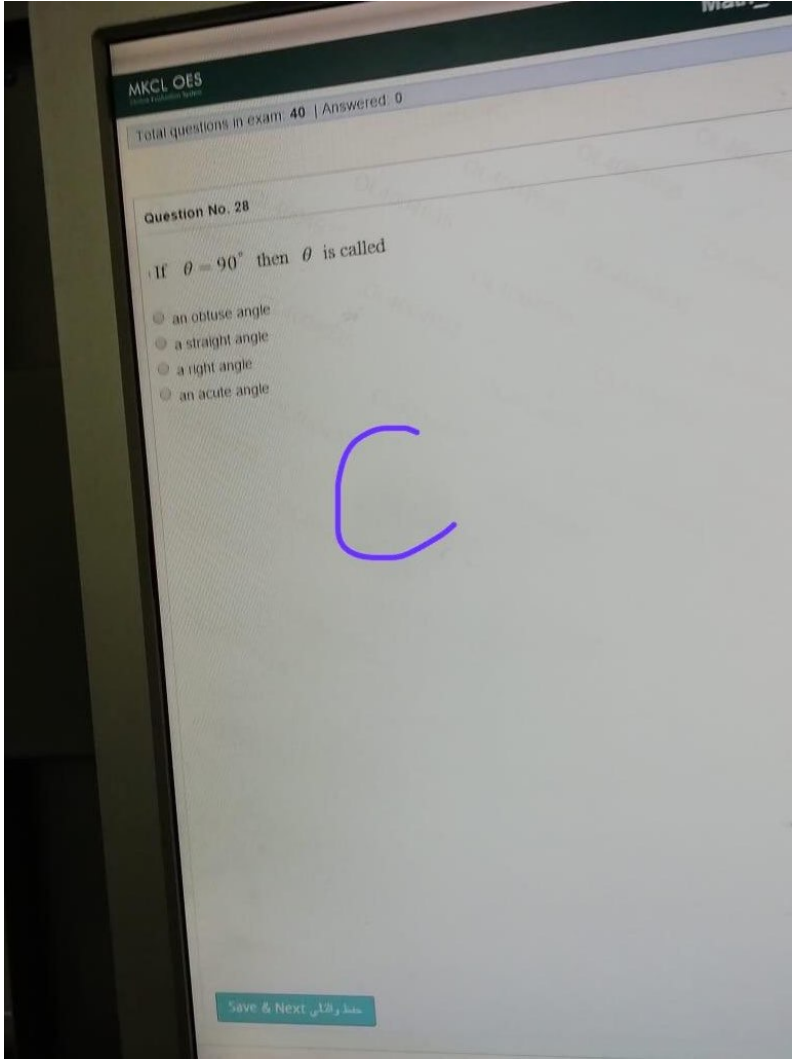
Question No. 8

$\csc\theta =$

- $\frac{1}{\cos\theta}$
- $\frac{\cos\theta}{\sin\theta}$
- $\frac{1}{\sin\theta}$
- $\frac{\sin\theta}{\cos\theta}$

C





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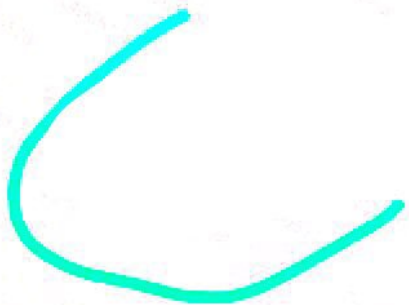
Total questions in exam: 40 | Answered: 18

Question No 24

Let $a \in \mathbb{R}$. If the solution set of the inequality $|4x - 8| + a > 0$ is $(-\infty, 2) \cup (2, +\infty)$ then

- a = -1
- a = 1
- a = 0
- a = 2



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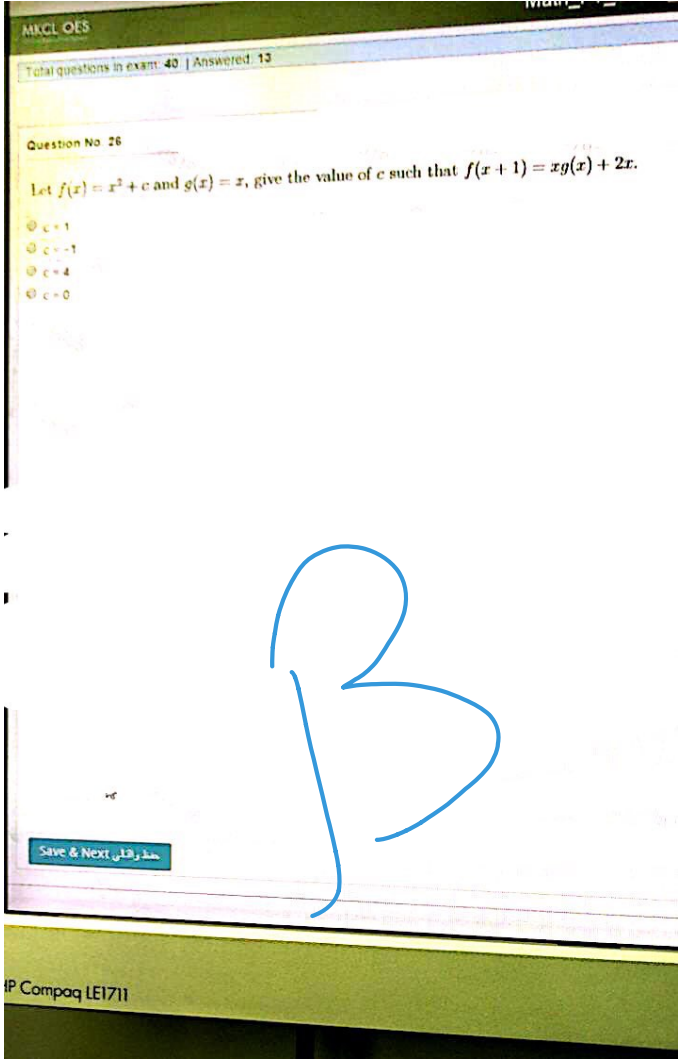
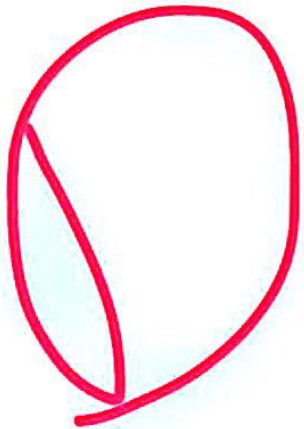


Question No. 16

Compute the product $(x-2)(x-3)$

- x^2+5x+6
- x^2-5x-6
- x^2-6x+5
- x^2-5x+6



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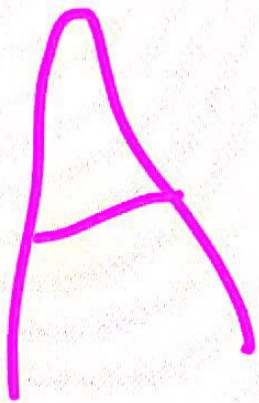
Total questions in exam: **40** | Answered: **0**

Question No. 11

If x+a is a factor of the polynomial f(x) then

- $f(-a) = 0$
- $f(a) = -a$
- $f(-a) \neq 0$
- $f(a) = 0$



Total questions in exam: 40 | Answered: 7

Question No. 22

Let $a \in \mathbb{R}$. Give the condition on a that makes the relation $F = \{(-1,1),(2,1),(a,3),(-2,a)\}$ a functi

- $a \in \{-1,-2,1,2,3\}$
- $a \in \mathbb{R}\backslash\{1,3\}$
- $a \in \mathbb{R}$
- $a \in \mathbb{R}\backslash\{-1,2,-2\}$

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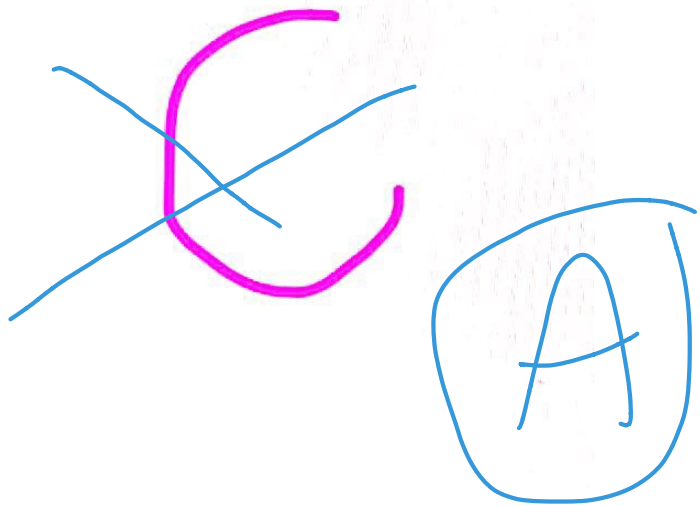
Total questions in exam: 40 | Answered: 0

Question No. 34

Evaluate $\lim_{x \to 1^+} \frac{x^2 - 1}{|x - 1|}$

- 2
- 6
- -2
- 1



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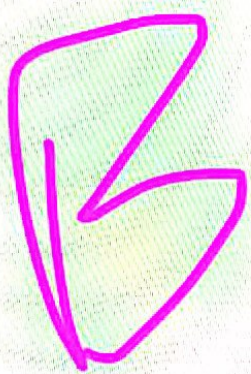
Total questions in exam: 40 | Answered: 0

Question No. 9

If θ is an acute angle in a right triangle, then $\tan\theta =$

- $\frac{\text{opposite}}{\text{hypotenuse}}$
- $\frac{\text{opposite}}{\text{adjacent}}$
- $\frac{\text{adjacent}}{\text{opposite}}$
- $\frac{\text{adjacent}}{\text{hypotenuse}}$



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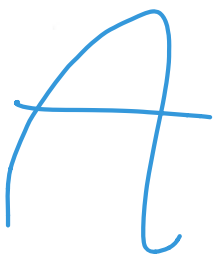
Total questions in exam: 40 | Answered: 0

Question No. 40

The graph of $f(x) = 3^x$ is

- Increasing
- Constant
- Decreasing and Increasing
- Decreasing



Question No. 24

Let $a \in (-\infty, 0]$. Solve the inequality $|2x-2| \leq |-2a|$.

- $(-\infty, 1+a] \cup [1-a, +\infty)$
- $[1-a, 1+a]$
- $[1+a, 1-a]$
- $[-a, a]$

$2a \leq 2x-2 \leq -2a$

$+2 \qquad +2 \qquad +2$

$2a+2 \leq 2x \leq -2a+2$

$a+1 \leq x \leq -a+1$

$[1-a, 1+a]$

B

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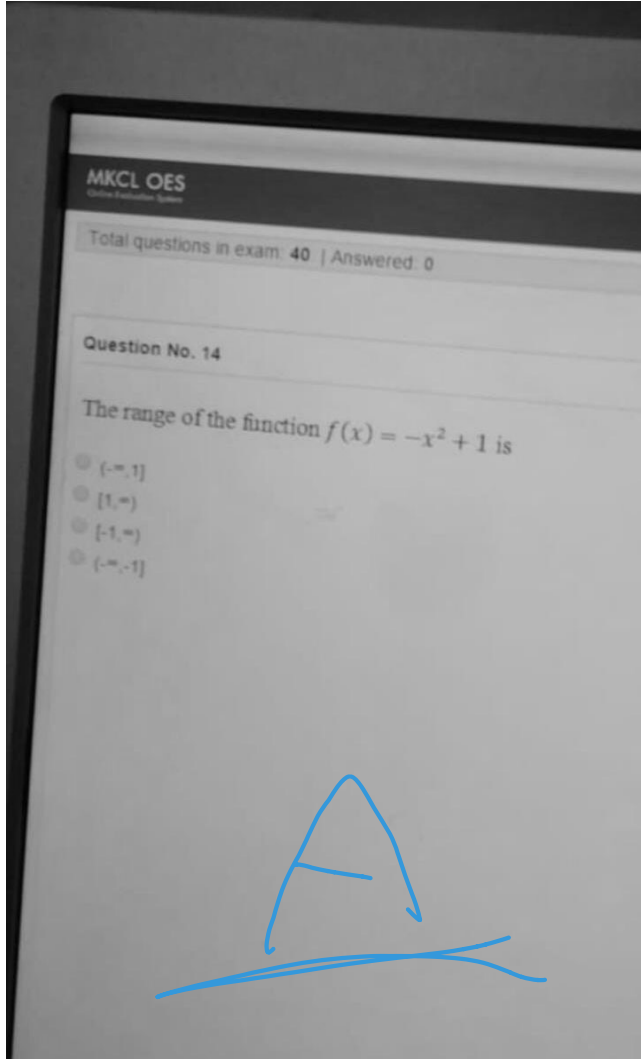

Total questions in exam: 40 | Answered: 22

Question No. 23

Let $f(x) = -\frac{3}{2}x + 4$, find the value of a such that $f(2a) = 7$.

- a = 0.
- a = 1.
- a = −1.
- a = 2.

$$-\frac{3}{2}(2a) + 4 = 7$$

$$-3a + 4 = 7$$

$$-3a = 3$$

$$a = -1$$

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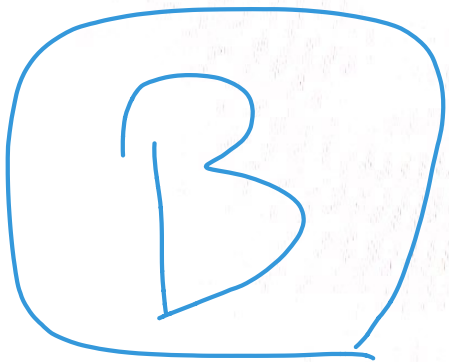
Total questions in exam: **40** | Answered: **0**

Question No. 30

Solve $1 < 7 - x < 10$

- (-6,-3)
- (-3,6)
- (-6,3)
- (3,6)



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Question No. 29

Let $f(x) = ax^2 + bx + 1$, find the values of a and b such that $f(x) = f(-x)$, for all $x \in \mathbb{R}$.

- $a = b = 1$.
- $a = -1$ and $b = 1$.
- $a \in \mathbb{R}$ and $b = 0$.
- $a \in \mathbb{R}$ and $b = 1$.

$ax^2 + bx + 1 = a(-x)^2 + b(-x) + 1$

$ax^2 + bx + 1 = ax^2 - bx + 1$

$ax^2 + 1 = ax^2 + 1$ ← C

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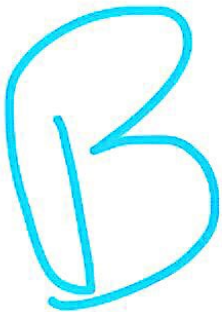
Total questions in exam: 40 | Answered: 40

Question No. 37

Let $a > 1$. The solution set of the equation $\log_x(2x^2 - a^2) = 2$ is

- S = {a, 2a}
- S = {a}
- S = {-a}
- S = {-a, a}



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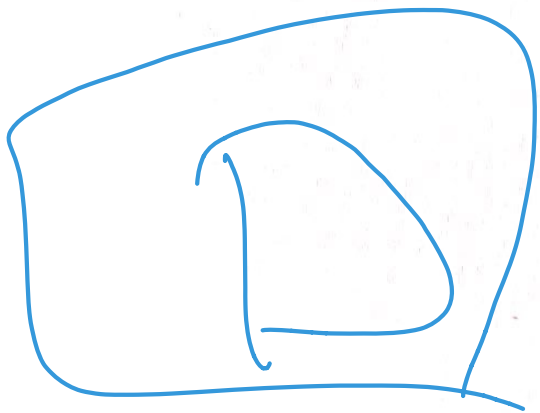
Total questions in exam: **40** | Answered: **0**

Question No. 31

Evaluate $\lim_{x \to 9} \frac{\sqrt{x} - 3}{x - 9} =$

- $-\frac{1}{4}$
- $-\frac{1}{6}$
- $\frac{1}{2}$
- $\frac{1}{6}$



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