



MATH
QUIZ 2
1441

Never lose hope
You never know
What tomorrow
May bring.

Question No. 20

The solution set of the following equation: $|x - 3| = 2x + 1$ is

- $\left\{4, \frac{2}{3}\right\}$
- $\left\{\frac{2}{3}\right\}$
- ϕ
- $\{-4\}$

B

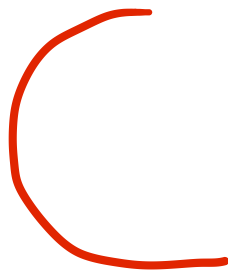
بالحاسبة جربو
الخيارين مكان
الإكس لازم
الطرفين يساوو
بعض

Question No. 15

Find the value of a such that the remainder of $\frac{3x^2 + 10x^2 + ax + 3}{x + 1}$ is zero.

- 0
- 1
- 2
- 4

10



Question No. 24

Given that $f(x) = 6x^3 + x^2 + 5x - 12$, then one of the following is a factor of $f(x)$

- $x - 2$
- $x + 1$
- $x - 1$
- $x + 2$



$$X-1=0$$

$$X=1$$

عوضو بموجب واحد
مكان كل إكس بالمعادلة
وحيعطيكم صفر كذا
يعني فاكتر

Question No. 25

If $p(x) = \sqrt{x+3}$ and $q(x) = \sqrt{x-4}$. Evaluate $(p \cdot q)(1)$.

- 12
- $2\sqrt{3}$
- $-2\sqrt{3}$
- undefined

D

لما تحطوها بالحاسبة وتحطو مكان
الاكس واحد وتضربو الجذرين
ببعض حيجيكم ERROR

The solution of $\frac{3x+4}{2x-1} \leq 0$ is

$(-\infty, -\frac{4}{3}) \cup (\frac{1}{2}, \infty)$

$[-\frac{4}{3}, \frac{1}{2})$

$(-\frac{4}{3}, \frac{1}{2})$

$(-\infty, -\frac{4}{3}] \cup (\frac{1}{2}, \infty)$

B

Question No. 23

Give the y-intercept of the line $3y - x = 0$

- 3
- 3
- 0
- 1

عشان أجيب الواي انترسيبت
لازم اخلي الواي بطرف
وأعوض عن الإكس بصفر

$$3y = x$$

$$y = \frac{0}{3}$$

$$0 = \text{بالحاسبة}$$

Which of the following functions is one-to-one

- A $F = \{ (3,5), (6,0), (3,-2), (1,-5) \}$
- B $F = \{ (-3,-2), (0,4), (3,-2), (1,-5) \}$
- C $F = \{ (4,-3), (1,0), (5,-2), (1,-3) \}$
- D $F = \{ (-3,-3), (0,0), (4,-2), (1,-5) \}$

عشان تكون ون تو ون لازم
الاكس والواي الاثنين مايتكررو

Question No. 9

A

Let $a > 0$, $f(x) = x^2 - 2ax + 4$ and $g(x) = -x^2 + 2ax + 2a$. The value of a that makes the graphs of $f(x)$ and $g(x)$ have the same vertex is

- a = 3
- a = 1
- a = -2
- a = 0

B

Question No. 13

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 $f(x_1) > f(x_2)$,

B

حتكون الدالة ثابتة لما الإكس
يكون مختلف وقيمة الواي
نفسها

Question No. 26

Find the domain of $f(x) = \frac{2}{\sqrt{|x|-3}}$.

- $[-3, 3]$.
- $(-\infty, -3) \cup (3, \infty)$.
- $(-\infty, -3] \cup [3, \infty)$.
- $(-3, 3)$.

B

$$x \geq 3 \text{ or } x \leq -3$$

القوس في اصفار للمقام
مايكون مغلق انتبهو
Case (3)

Solve: $2x^2 = x - 4$

○ $\left\{ \frac{1}{5} (-1 \pm i\sqrt{31}) \right\}$

○ $\left\{ \frac{1}{5} (1 \pm i\sqrt{31}) \right\}$

○ $\left\{ \frac{1}{4} (1 \pm i\sqrt{31}) \right\}$

○ $\left\{ \frac{1}{6} (-1 \pm i\sqrt{31}) \right\}$

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

بالحاسبة مود خمسة ثلاثة

Question No. 21

A zero of a polynomial function $f(x)$ is

- Ⓐ an x -intercept of the graph of the function.
- Ⓑ an y -intercept of the graph of the function.
- Ⓒ a solution of the equation $f(x) = 1$.
- Ⓓ a solution of the equation $f(x) = x$.

کلام ناپا

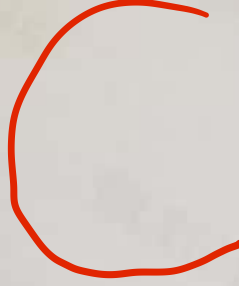
Which of the following equations has solutions a and b ?

$x^2 + (a + b)x + ab = 0$

$x^2 + (a + b)x - ab = 0$

$x^2 - (a + b)x + ab = 0$

$x^2 - (a + b)x - ab = 0$



If $f(x) = \frac{1}{x^2 - 2x + 1}$ then $f(-1) =$

- 4
- 0
- 3
- 4
- 3
- 2

C $\frac{1}{4}$ 'alal'!

Question No. 10

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

$a = -1$

$a = 0$

$a = 1$

$a = 2$

A
$$-\frac{3}{2}(2x-1) = 7 \checkmark$$

Question No. 18

Find $f(x) + g(x)$ and its domain, where $f(x) = 4x + 7$ and $g(x) = 5x^2$

- Ⓐ $4x + 7 - 5x^2$; domain $(-\infty, \infty)$
- Ⓑ $\frac{4x+7}{5x^2}$; domain $(-\infty, \infty)$
- Ⓒ $20x^3 + 35x$; domain $(-\infty, \infty)$
- Ⓓ $4x + 7 + 5x^2$; domain $(-\infty, \infty)$

Question No. 17

If $f(x) = -3(x + 1)^2 - 5$, then the vertex of the graph of f is

- (1, 5)
- (-1, 5)
- (-1, -5)
- (-3, -5)



Question No. 12

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

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

Question No. 19

The solution set of the following equation: $|5x - 2| = 0$ is

- ϕ
- $\{\phi\}$
- $\frac{4}{5}$
- $\left\{\frac{2}{5}\right\}$



Question No. 3

What is the equation of the quadratic function $y = x^2 + 24x + 29$ in vertex form?

- Ⓐ $y = (x + 12)^2 - 115$
- Ⓑ $y = (x + 12)^2 - 173$
- Ⓒ $y = (x - 12)^2 - 115$
- Ⓓ $y = (x - 12)^2 - 173$

A

$$x = \frac{-b}{2a} = \frac{-24}{2(1)}$$
$$= -12$$

$$y = (-12)^2 + 24(-12) + 29$$
$$= -115$$

Question No. 8

If $a \in \mathbb{R}$, solve the inequality $3x - 5a \leq \frac{1}{2}(x + 1)$, for x .

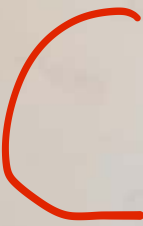
- Ⓐ $[2a + \frac{1}{2}, \infty)$
- Ⓑ $(-\infty, 2a + \frac{1}{2}]$
- Ⓒ $(-\infty, 2a - \frac{1}{2}]$
- Ⓓ $(-\infty, 2a + \frac{1}{2})$

B

Question No. 14

Let $a \in \mathbb{R}$. Give the value of a such that the point $(1, 1)$ belongs to both lines $ax + a^2y = 6$ and a^2x

- $a = -1$
- $a = 3$
- $a = -3$
- $a = 1$



Question No. 19

Solve $-3(x + 4) + 2x < 6$

- $(-18, \infty)$
- $(18, \infty]$
- $(-\infty, -18)$
- $(-\infty, -18]$

A

The solution of $4x^2 < 20 + 11x$ is

$(-\infty, -4) \cup \left(\frac{5}{4}, \infty\right)$

$\left(-\infty, -\frac{5}{4}\right) \cup (4, \infty)$

$\left(-\frac{5}{4}, 4\right)$

$\left(-4, \frac{5}{4}\right)$



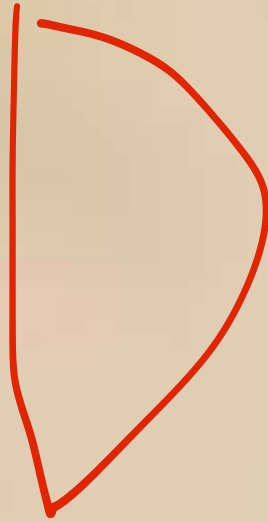
if $f(x) = (x-1)^2$ then $f(a^3) =$

● $3a^2 + 2a - 1$

● $a^2 + 2a - 1$

● $a^6 + a + 2$

● $a^6 - 2a^3 + 1$



The axis of the graph of $f(x) = x^2 - x + 1$ is

$y = \frac{-1}{2}$

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

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

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

B

The solution set of the following equation: $|x^2 + 1| - |2x| = 0$ is

- $\{-1\}$
- $\{-1, 1\}$
- $\{1\}$
- ϕ

B

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

● $3a^2 + 2a - 1$

● $a^2 + 2a - 1$

● $3a^2 + 8a + 4$

● $a^4 + 2a^2 - 1$



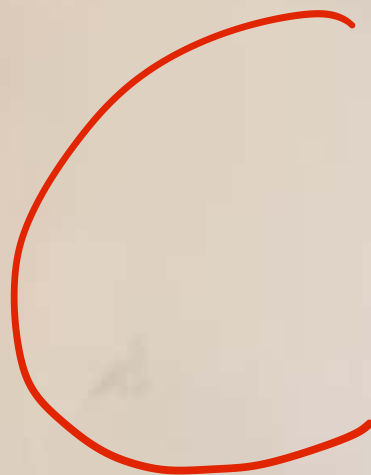
Which of the following functions is one-to-one

● $f(x) = 5x^2 - 1$

● $f(x) = \sqrt{16 - x^2}$

● $f(x) = -2x + 5$

● $f(x) = -2x^2 + 5$



Write $x < -4$ or $x \geq 4$ in interval notation

● $(-\infty, -4] \cup (4, \infty)$

● $[-4, 4)$

● $(-\infty, -4) \cup [4, \infty)$

● $[-4, 4]$



Question **

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

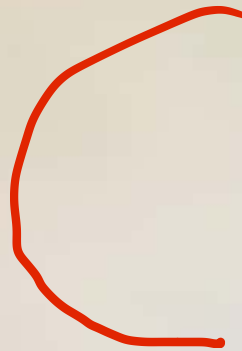
$$F = \{(7, -1), (5, 1 - a), (0, 5), (-2, a), (1, 3)\}$$

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



Let $a \in \mathbb{R}$ and $x + 2 - a^2$ is a factor of a polynomial function $f(x)$, then

- $f(2 - a^2) = 0$
- $f(a^2 + 2) = 0$
- $f(a^2 - 2) = 0$
- $f(-a^2 - 2) = 0$



The solution set of the following equation: $4 - |x - 1| = -1$ is

$\{-4, -2\}$

$\{-4, 6\}$

\emptyset

$\{2, 4\}$

B
$$\frac{|x-1|}{\cancel{+1}} = \frac{-5}{-1}$$
$$= 5$$

Case 1

$$x - 1 = 5 \left\{ \begin{array}{l} x - 1 = -5 \\ x = -4 \end{array} \right.$$
$$x = 6$$

The solution set of the equation $8x^3 = a^3$, for x , is

ϕ

$\left\{ \frac{a}{2}, -\frac{a}{4} + \frac{a\sqrt{3}}{4}i, -\frac{a}{4} - \frac{a\sqrt{3}}{4}i \right\}$

$\left\{ \frac{a}{2}, -\frac{a}{8} + \frac{a\sqrt{3}}{8}i, -\frac{a}{8} - \frac{a\sqrt{3}}{8}i \right\}$

$\left\{ \frac{a}{2} \right\}$

B

Total questions in exam: 25 | Answered: 0

The function has an inverse:

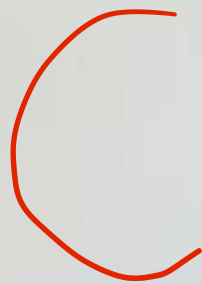
- None of these answers
- It is quadratic
- It is one-to-one
- doesn't satisfy the horizontal line test



بس الون توون اللي
عندها معكوس

The solution set of $-27x = x^3 - 12x^2$ is

- (0, 3, -9)
- (-3, -9)
- (0, 3, 9)
- (3, 9)



$$x(x^2 - 12x + 27)$$

Mod 5 3

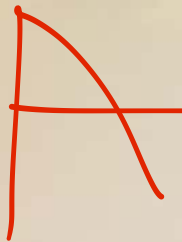
Find $(f \circ g)(x)$, where $f(x) = x^2 - 1$, $g(x) = x^2 + 3$

- $x^4 + 6x^2 + 8$
- $x^4 + 8$
- $x^4 + 2x^2 + 4$
- $x^4 + 4$

A

If $a < b < c$, solve the inequality $\frac{(x-a)(x-b)}{(x-c)} \leq 0$, for x .

- $(-\infty, a] \cup [b, c)$
- $(-\infty, a]$
- $[a, \infty)$
- $[a, b] \cup (c, \infty)$



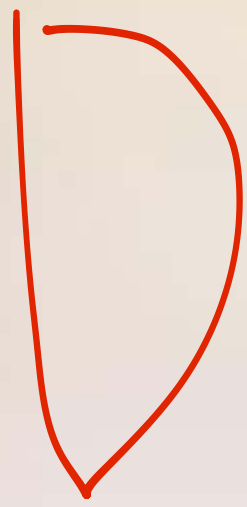
The line through the point $(-1, -3)$ with slope equal to zero is

- $y = -1$
- $y = -3$
- $x = -3$
- $x = -1$

B

Given that $f(x) = 6x^3 + x^2 + 5x - 12$, then one of the following is a factor of $f(x)$

- $x + 2$
- $x - 2$
- $x + 1$
- $x - 1$



Give the x-intercept of the line $y = 6x - 12$

0-3

0-2

0-2

0-5

ب
خط
مقطع
المحور
الخ
هو
2

Total questions

A⁻ A A⁺

Let $b \in \mathbb{R} \setminus \{-1\}$. Give the value of b such that the line $y = (b+2)x + 2$ is parallel to the line $b^2x - y = 3$.

- $b = 3$
- $b = 1$
- $b = -3$
- $b = 2$

لازم يکونو متساويين

D

$$(b+2) = b^2$$

$$2+2 = 2^2$$

$$4 = 4 \quad \checkmark$$

If $f(x) = \frac{3}{x-2}$ and $g(x) = \frac{4}{x+5}$. Find the sum of $f(x)$ and $g(x)$.

$(f+g)(x) = \frac{7x+7}{(x-2)(x+5)}$

$(f+g)(x) = \frac{7}{x+3}$

$(f+g)(x) = \frac{7x-3}{(x-2)(x+5)}$

$(f+g)(x) = \frac{7x+13}{(x-2)(x+5)}$

A

اضربو ووحده
مقامات

If $p(x) = \sqrt{x+3}$ and $q(x) = \sqrt{x-4}$. Compute the product $H(x) = (p \cdot q)(x)$.

$H(x) = \sqrt{x-1}$

$H(x) = \sqrt{x+1}$

$H(x) = (x+3)(x-4)$

$H(x) = \sqrt{(x+3)(x-4)}$



The remainder of the division $(x^4 + x^3 + x^2 + x + 1) \div (x - 1)$ is

~~A~~

مضروب المقام = 1

اختر من الممكن ان $x=1$

The solution set of the following equation: $|x-2| = |x-1|$ is

$\left\{\frac{5}{2}\right\}$

$\left\{\frac{3}{2}\right\}$

$\left\{\frac{3}{2}, \frac{5}{2}\right\}$

ϕ

B

بالحاسبة عوضو
مكان الإكس

If 5 is a zero of $f(x) = x^3 - 8x^2 + 11x + 20$, then other zeros are

- 4, 1
- 4, 1
- 4, -1
- 4, -1



عوضو بالحاسبة مكان
الإكس وشوفو ايش
يعطيكم صفر

The slope of the vertical line is

- 1
- 0
- Undefined
- 1

يعني مستقيم قائم معادلتو
إكس فميلاه غير معرف

Question No. 16

Solve $x^2 + 6x < 7$

$(-7, 1)$

$(-\infty, -1) \cup (7, \infty)$

$(-1, 7)$

$(-\infty, -7) \cup (1, \infty)$

A

Which of the following functions is not one-to-one

● $f(x) = -2x + 5$

● $f(x) = 8 + 16x$

● $f(x) = \sqrt{81 - x^2}$

● $f(x) = x$



التربيعية ماتكون ون تو
ون ابدأ

Question No. 6

The quotient of the division $(x^4 - x^3 - 5x^2 - 3x + 2) \div (x - 1)$ is

- $x^3 - 5x - 8$
- $x^3 - 5x^2 - 8$
- $x^3 + 5x + 8$
- $x^3 + 5x^2 + 8$

A

Question No. 19

Solve $-3(x+4) + 2x < 6$

- $(-18, \infty)$
- $(18, \infty]$
- $(-\infty, -18)$
- $(-\infty, -18]$

A

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

$$\underline{f(4) = 0}$$

$$f(-4) = 0$$

$$f(4) = 0$$

$$f(0) = -4$$

$$f(0) = 4$$

Question No. 11

Find the slope of the line through the points $(-4, 8), (2, -3)$

- $-\frac{11}{6}$
- $\frac{11}{6}$
- $-\frac{6}{11}$
- $\frac{6}{11}$

A

A

قانون الميل فرق الواي
على فرق الإكس

Question No. 4

If $f(x) = \frac{3}{x-2}$ and $g(x) = \frac{4}{x+5}$. Find the sum of $f(x)$ and $g(x)$.

$(f+g)(x) = \frac{7x+7}{(x-2)(x+5)}$

$(f+g)(x) = \frac{7}{x+3}$

$(f+g)(x) = \frac{7x-3}{(x-2)(x+5)}$

$(f+g)(x) = \frac{7x+13}{(x-2)(x+5)}$

A

أجمعوها بيدكم
وحددو المقامات

Question No. 2

Give the x-intercept of the line $y = 6x - 12$

$$\begin{aligned} \rightarrow y + 12 &= 6x \\ \hline &6 \end{aligned}$$

2

4
 6

$$2 = \frac{0 + 12}{6} = x$$

Question No. 4

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

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

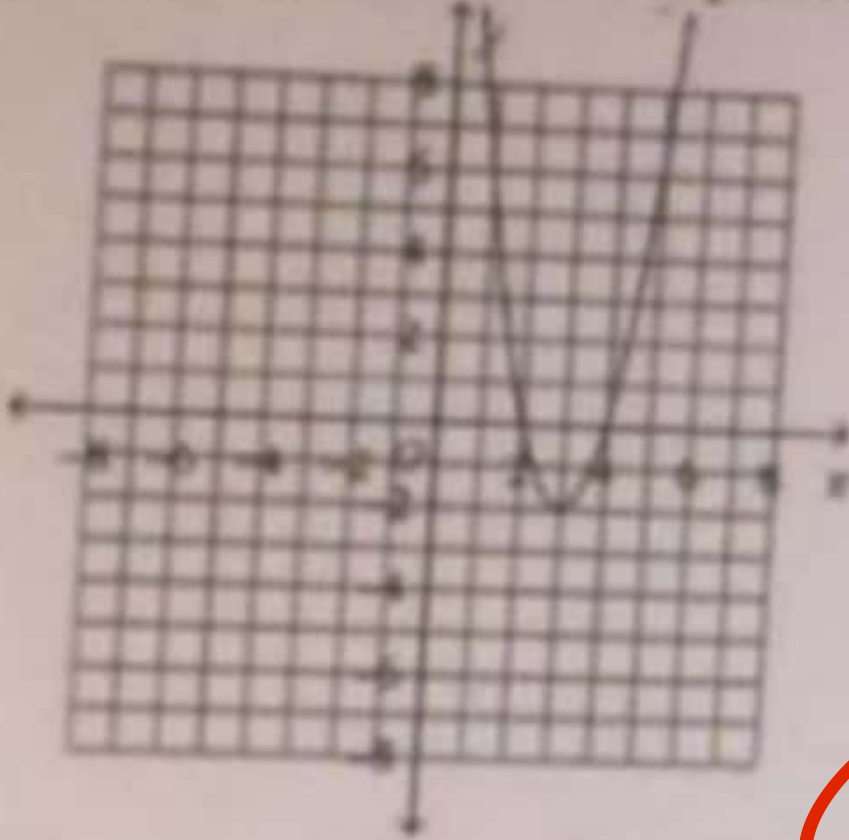
Question No. 5

Give the domain of the function $f(x) = \frac{x^2 + 2x - 1}{\sqrt{4 - |2x + 4|}}$.

- R
- $(-4, 0)$
- $(-\infty, 0)$
- $(0, 4)$

B

Write the equation of this parabola in vertex form.



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

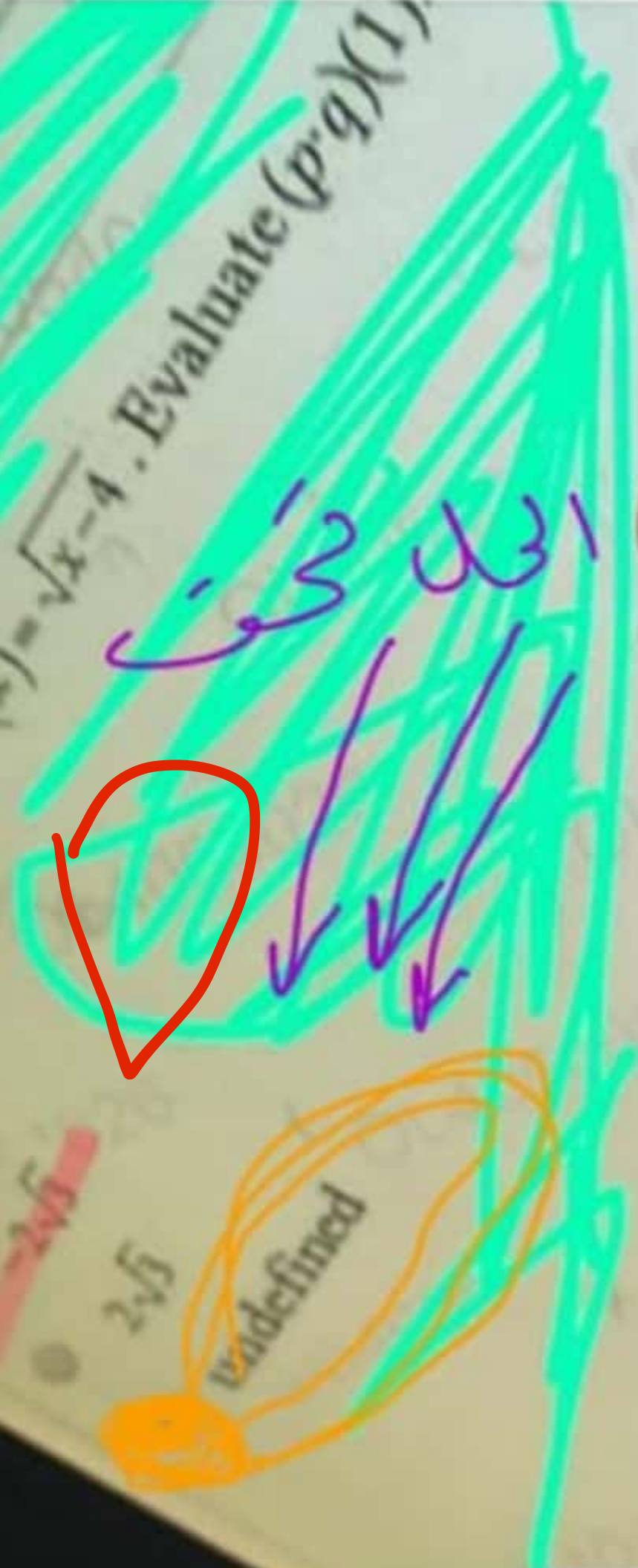


ليش قلنا سي؟ لأنه السالب اثنين اللي برا هي الواي براس الرسمة مع موجب ثلاثه عند الاكس
معامل اكس اللي برا القوس موجب عشان كذا الرسمة على فوق ليش قلنا انه 2 عشان الرسمة ضيقة عشان معامل الاكس لما يكون اكبر من واحد تكون ضيقة

Question No. 5

If $p(x) = \sqrt{x+3}$ and $q(x) = \sqrt{x-4}$. Evaluate $(p \cdot q)(1)$

- 12
- $2\sqrt{5}$
- $2\sqrt{2}$
- undefined



Find $2f(x) - 3g(x)$, where $f(x) = x^2 + 2x - 1$ and $g(x) = 2x - 4$.

$-3x^2 - 2x - 7$

$2x^2 - 2x - 14$

$-3x^2 - 2x - 1$

$2x^2 - 2x + 10$



Question No. 5

If $f(x) = (x - 3)(x + 1) + c$ and the remainder of $\frac{f(x)}{x+2}$ is 6, then $f(x)$ is equal to

- $x^2 - 2x + 3$
- $x^2 - 2x - 2$
- $2x^2 - 2x + 6$
- $x^2 - 2x - 1$

B

عوضو بسالب اثنين اللي هي
صفر المقام بالدالة وشوفو مين
يعطيكم 6 من الخياري

Total questions in exam 25 |

Question No. 11

The slope of the line $x = -3$ is

- 1
- 0
- Undefined
- 1

الميل لإكس يكون غير معرف

Question No. 24

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

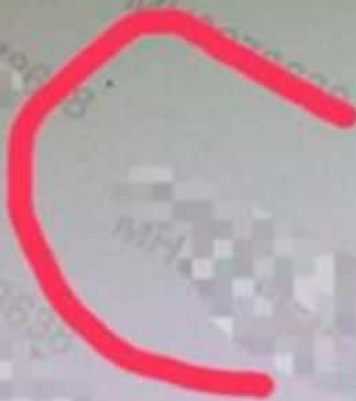
- $(-\infty, 1]$
- $[-2, \infty)$
- $[1, \infty)$
- $(-\infty, \infty)$

$y < 1$

Question No. 16

Let $a \in \mathbb{R}$. Find the equation of the line passes through the points $(2, 2a)$ and $(1, a)$.

- $x - ay = 1$
- $ax + y = 0$
- $ax - y = 0$
- $ax - y = 1$



Question No. 8

If $a \in \mathbb{R}$, solve the inequality $3x - 5a \leq \frac{1}{2}(x + 1)$, for x .

- $[2a + \frac{1}{2}, \infty)$
- $(-\infty, 2a + \frac{1}{2}]$
- $(-\infty, 2a - \frac{1}{2}]$
- $(-\infty, 2a + \frac{1}{2})$

B

Which of the following is a pair of inverse functions?

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



Question No. 1

If the remainder of the division of $f(x)$ by $x + a$ is zero then

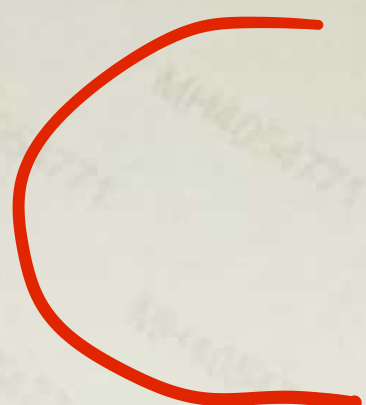
- $x + a$ is a factor of the polynomial $f(x)$
- x is a factor of the polynomial $f(x)$
- $x - a$ is a factor of the polynomial $f(x)$
- a is a factor of the polynomial $f(x)$

A

Question No. 9

The range of the function $f(x) = 1 - \frac{3}{2+x}$ is

- $\mathbb{R} \setminus \{-2\}$
- $\mathbb{R} \setminus \{3\}$
- $\mathbb{R} \setminus \{1\}$
- $\mathbb{R} \setminus \{0\}$



Total questions in exam: 28 | Answered: 1

Question No. 28

Let $a \in \mathbb{R}$. Give the value of a such that the point $(1, 1)$ belongs to both lines $ax + a^2y = 6$ and $a^2x + 2y = 11$.

- $a = 1$
- $a = -2$
- $a = 3$
- $a = -1$

B

Question No. 28

A function $f(x)$ is one-to-one if

- $a \neq b \Rightarrow f(a) \neq f(b)$
- $a = b \Rightarrow f(a) \neq f(b)$
- $f(a) = f(b) \Rightarrow a \neq b$
- $a \neq b \Rightarrow f(a) = f(b)$

A

Question No. 18

If $f(x) = \frac{3}{x-2}$ and $g(x) = \frac{4}{x+5}$. Find the product of $f(x)$ and $g(x)$.

● $(f \cdot g)(x) = \frac{7}{(x-2)(x+5)}$

● $(f \cdot g)(x) = \frac{12}{x-10}$

● $(f \cdot g)(x) = \frac{12}{(x-2)(x+5)}$

● $(f \cdot g)(x) = \frac{12}{x^2-10}$



مضروبهم

Question No. 21

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

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

B

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Question No. 14

Let $a \in \mathbb{R} \setminus \{1\}$. Find the value of a such that the quotient of dividing $f(x) = x^3 + (1-a)x^2 + a^2x - 1$ by $x-a$ is $x^2 + x + 2$.

- $a = -1$
- $a = 1$
- $a = -2$
- $a = 2$



Question No. 13

Solving the equation $x^2 + ax - 1 = x$, for x , gives

- $\left(\frac{-1 \pm \sqrt{a^2 - 2a + 5}}{2}\right)$
- $\left(\frac{-1 \pm \sqrt{a^2 - 2a + 5}}{2}\right)$
- $\left(\frac{1 - a \pm \sqrt{a^2 - 2a + 5}}{2}\right)$
- $\left(\frac{1 - a \pm \sqrt{a^2 - 2a + 5}}{2}\right)$

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

Question No. 18

The slope of the line $4x - 2y = 12$ is

لو فيه اربعة على اثنين
حتكون هي الجواب

D $y = \frac{-4x + 12}{-2}$

$$y = \frac{4}{2}x + 12$$

$$m = \frac{-A}{B} = \frac{4}{-(-2)} = \frac{4}{2}$$

Question No. 13

The solution set of the following equation: $|x - 2| = 2x - 7$ is

- $\{3\}$
- \emptyset
- $\{5\}$
- $\{-4, 3\}$

Correct

Question No. 11

Determine the solution set of the following inequality

$$-4 + x < -x$$

- $S = \emptyset$
- $S = (2, \infty)$
- $S = (-\infty, -2)$
- $S = (-\infty, 2)$



Question No. 22

Solve the inequality $x^2(x-1)(x-2) \leq 0$

- $x \in \mathbb{R} \setminus (1, 2)$
- $x \in \mathbb{R} \setminus [1, 2]$
- $x \in [1, 2] \cup \{0\}$
- $x \in (1, 2) \cup \{0\}$



Question No. 12

The quotient of the division $(x^3 + 3x^2 - x + 1) \div (x + 2)$ is

- $x^2 - x + 3$
- $x^2 + x - 3$
- $x^2 - x - 3$
- $x^2 + x + 3$



Question No. 8

The domain and the range of $f(x) = 2x$ is

- all non-zero real numbers
- all negative real numbers
- all positive real numbers
- all real numbers

D

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Question No. 3

The function $f(x) = 2(x - 3)^2 - 3$ can be written as

- $f(x) = 2x^2 - 12x + 6$
- $f(x) = 2x^2 - 12x - 21$
- $f(x) = 2x^2 - 6x + 15$
- $f(x) = 2x^2 - 12x + 15$

C 40

Question No. 18

The slope of the line $4x - 2y = 12$ is.

2

$\frac{1}{2}$

$-\frac{1}{2}$

$-\frac{1}{4}$

Undefined.

Undefined

Question No. 5

The slope of the vertical line is

- 0
- 1
- 1
- Undefined



Question No. 4

Determine the solution set of the following inequality

$$(x-5)^2 \geq 4$$

- $(3,7)$
- $[3,7]$
- $(-\infty, 3) \cup (7, \infty)$
- $(-\infty, 3] \cup [7, \infty)$



Question No. 7

Given that $f(x) = 5x^3 + x^2 + 3x + 7$, then one of the following is a factor of $f(x)$

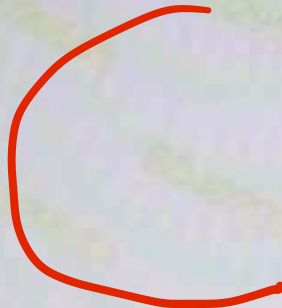
- $x + 2$
- $x - 2$
- $x + 1$
- $x - 1$



Question No. 2

Find the equation of the quadratic function that has a vertex at $(-4, -4)$ and has the point $(-3, -5)$ on its graph

- $f(x) = -x^2 + 4x - 4$
- $f(x) = -3x^2 + 8x + 20$
- $f(x) = -x^2 - 8x - 20$
- $f(x) = x^2 + 8x - 4$



Question No. 3

The function $f(x) = 2(x - 3)^2 - 3$ can be written as

- $f(x) = 2x^2 - 12x + 6$
- $f(x) = 2x^2 - 12x - 21$
- $f(x) = 2x^2 - 6x + 15$
- $f(x) = 2x^2 - 12x + 15$

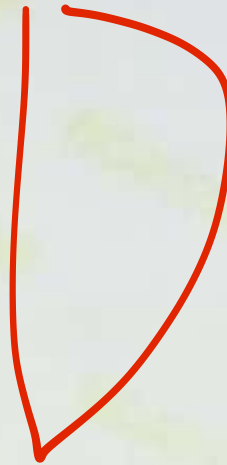


Question No. 4

Determine the solution set of the following inequality

$$(x - 5)^2 \geq 4$$

- (3,7)
- [3,7]
- $(-\infty, 3) \cup (7, \infty)$
- $(-\infty, 3] \cup [7, \infty)$



Question No. 15

Factor $f(x) = (x^4 - 1)$ into its linear factors given that $-i$ and i are zeros of $f(x)$

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



Question No. 10

If $f(x) = \frac{x}{2}$ and $g(x) = x + 2$, what is $g(f(4))$?

- A. 10
- B. 12
- C. 14
- D. 16

B

Question No. 24

The solution set of $z^2 + i^2 = 0$ is

- $S = \{-i, +i\}$
- $S = \{+i\}$
- $S = \{-i\}$
- $S = \{-1, +1\}$

D

Question No. 13

The solution set of the following equation: $|x - 2| = 2x - 7$ is

- $\{3\}$
- ϕ
- $\{5\}$
- $\{-4, 3\}$

C. null.