The solution set of the equation $x^{\frac{2}{3}} = \frac{1}{4}$ is

- $\{\frac{1}{4}\}$
- $\{\frac{1}{8}\}$
- $\{\frac{-1}{8}\}$
- $\{\frac{-1}{8}, \frac{1}{8}\}$

B

عوض بقيمه X من الخيارات

The degree of the quotient of the division $(2x^9 - 4x^3 + 6x - 5) \div (x - 3)$ equals:

- ◯ 9
- ◯ 7
- ◯ 8
- ◯ 6

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

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

B

Which of the following statements is always true.

- The graph of a quadratic function is a straight line.
- The graph of a quadratic function passes through the point (0, 0).
- The range of a quadratic function is the set of all real numbers.
- The axis of symmetry passes through the vertex.

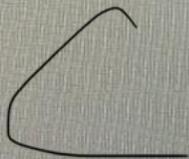Let a be a complex number and $f(x) = x^4 - x^2 - 12$. If $x - a$ is a factor of $f(x)$ then

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

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

○ $x \in (-\infty, -5) \cup (2, \infty)$

○ $x \in (-\infty, \infty)$

○ $x \in (-\infty, -5) \cup (-5, 2) \cup (2, \infty)$

○ $x \in (-5, 2)$

Question No. 16

Let $f(x) = \frac{1}{x^2 - 5x + 6}$ and $g(x) = \sqrt{16 - x^2}$. Find the domain of $\left(\frac{f}{g}\right)(x)$.

- $R \setminus \{2, 3\}$
- $(-4, 4)$
- $(-4, 2) \cup (2, 3) \cup (3, 4)$
- $(-4, 2) \cup (2, 4)$

Save & Next حفظ و التالي

Scientific Calculator

mod	Deg	Rad		
sinh	cosh	tanh	Exp	(	)
sinh⁻¹	cosh⁻¹	tanh⁻¹	log₂x	ln	log
π	e	n!	log_y x	eˣ	10ˣ
sin	cos	tan	xʸ	x³	x²
sin⁻¹	cos⁻¹	tan⁻¹	∛x	∛	|x|

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

- $\{0\}$
- $\{0,1\}$
- $\{1\}$
- ϕ

B

Question No. 24

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

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

Save & Next حفظ والتالي

A function is one-to-one if

- every horizontal line intersects the graph at most once
- every vertical line intersects the graph at most once
- every horizontal line intersects the graph twice
- every vertical line intersects the graph twice

Save & Next حفظ و التالی

Question No. 2

Let $a \in \mathbb{R}$. Give the value of a such that the point (a, a) belongs to the line $ax + 4y = -4$.

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

نعوض محل الاكس والواي بـ a ثم ننقل سالب 4 للطرف الثاني وبعدها نختار
مود 5—3 وبيطلع معانا الجواب سالب 2 يعني تلجواب هو D

$$a*2 + 4a +4$$

$$a= -2$$

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 $b^2 x - y = 3$.

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

m1=m2

b+2 = b*2

-b*2+b+2

Mode 5—3

B= 2 , B=-1

في السؤال يقول B تساوي جميع
الاعداد الحقيقه ماعدى 1- فنختار 2

Save & Next حفظ والتالي

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

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

C

Save & Next حفظ والتالي

Question No. 9

Solve $-0.2 \leq 0.7 - x \leq 1.8$

- no solution
- $-2.5 \leq x \leq 0.5$
- $-1.1 \leq x \leq 0.9$
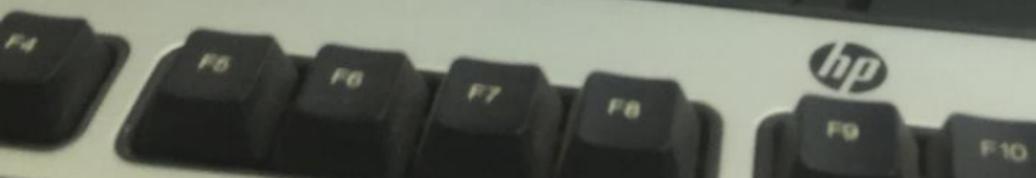- $-0.9 \leq x \leq 1.1$

Save & Next حفظ والي

Question No. 12

Let $a \in \mathbb{R}\backslash\{1\}$. 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 $x^2 + x + 2$.

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

Save & Next حفظ وتالي

Determine the solution set of the following inequality

$$-4 - x < -x$$

- ⊙ $s = (-\infty, -4)$
- ⊙ $s = (-\infty, \infty)$
- ⊙ $s = (4, \infty)$
- ⊙ $S = \phi$

B

Save & Next حفظ والتالي

Question No. 16

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

○ a = 3
○ a = -1
○ a = -3
○ a = 1

نعوض بالنقطين محل الاكس والواي

a.1 + a*2 .1=6

a*2 + a-6 =0

Mode 5—3

a= -3 ,a=2

a*2 .1 + 2 . 1=11

a*2 =9

a = -3 , +3

نختار القيمه اللي تكررت في المعادلتين وهي الجواب الصحيح

الجواب هو a= -3

Question No. 15

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

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

نفرض قيم للمتغيرات على النحو الاتي

a =3 , b=5 , c=9

راح تصير المعادله كذا

$$\frac{(X-3)(X-5)}{(X-9)}$$

نفرض قيمه لـX وهي 2 بيطلع الناتج -0.428 وذا العدد اصغر من صفر فالحل هنا صح

نفرض قيمه لـX وهي 4 راح يطلع الناتج 0.2 هل ذا الناتج اصغر من 0؟ لا فجموعه الحل ذي خاطئه

الان نفرض قيمه لـX وهي 6 راح يطلع الناتج -1 وذا الناتج اصغر من صفر فمجموعه الحل هنا تكون ✓

الان نفرض قيمه لـX وهي 10 راح يطلع الناتج 35 وذا العدد مو اصغر من الصفر فمجموعه الحل ذي خاطئه

فالحل هنا بيكون جميع الاعداد اللي اقل من a والاعداد اللي بين b و c فالجواب بيكون D

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

Mode 5—4

Let $a \in \mathbb{R}$ and $f(x) = x^3 - 2x^2 + ax - (a + 2)$. Use the remainder theorem to evaluate $f(1 + i)$.

- $f(1 + i) = -4 + (a - 2)i$
- $f(1 + i) = -4 + (a + 2)i$
- $f(1 + i) = a + 2i$
- $f(1 + i) = (a - 2)i$

نفرض قيمه لـ a وهي 3

ونعوض محل الاكس ب i+1

الناتج ببطلع   i+4-

نجرب بالخيارات ونشوف اي خيار يعطيني نفس
الناتج اللي فوق مع العلم اننا عوضنا ب a بس

الجواب هو a

The solution set of $-4|6 - x| + 4 \leq -20$ is

○ $(-\infty, 10] \cup [2, \infty)$

○ $(-\infty, 2] \cup [10, \infty)$

○ $(-\infty, 0] \cup [12, \infty)$

○ $(-\infty, 12] \cup [0, \infty)$

Question No. 14

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

- ○ 0
- ○ 10
- ○ 1
- ○ −4

B

عوض الاكس ب -1 وعوض الـ a بعدد يعطيك الناتج 0 اللي هو 10

Question No. 17

Find the axis of symmetry of $y = 2(x-5)^2 + 3$
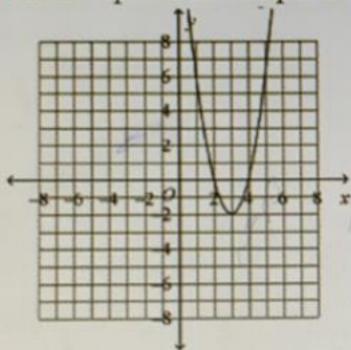
- ○ y = -3
- ○ x = 3
- ○ x = 5
- ○ y = 3

If $f(x) = \sqrt{x+2}$ and $g(x) = 3x - 5$. Find $h(x) = (g \circ f)(x)$.

○ $h(x) = \sqrt{3x-3}$

○ $h(x) = 3\sqrt{x+2}-5$

○ $h(x) = 3\sqrt{x-1}$

○ $h(x) = 3\sqrt{x}+3$

B

Write the equation of this parabola in vertex form.

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

Save & Next حفظ والتالي

Question No. 1

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

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

P

Total questions in exam: **25** | Answered: 0

Question No. 1

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

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

Save & Next حفظ والتالي

Question No. 22

If $f(x)$ is a polynomial such that $f(2) = 3$ then the remainder of the division $f(x) \div (x - 2)$ equals:

- 2
- -3
- -2
- 3

Save & Next حفظ و بعدی

ProDisplay P201

Question No. 25

If $f(x)$ is a polynomial such that the remainder of the division $f(x) \div (x - 1)$ equals 6 then

- $f(-1) = 6$
- $f(6) = -1$
- $f(1) = 6$
- $f(6) = 1$

Question No. 24

Let $a > 0$. The intervals on which the function $f(x) = a(x-h)^2 + k$ increases and decreases are

○ Increasing on $(-\infty, -h)$, decreasing on $[k, \infty)$
○ Increasing on $(-\infty, k)$, decreasing on (k, ∞)
○ Increasing on $[h, \infty)$, decreasing on $(-\infty, h]$
○ Increasing on $(-\infty, h)$, decreasing on $(-\infty, k)$

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

$f(0) = 2$

$f(2) = 0$

$f(0) = -2$

$f(-2) = 0$

Question No. 16

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

- F= { (3,5), (6,0), (7,-2), (1,-5) }
- F= { (4,-3), (1,0), (5,-2), (1,3) }
- F= { (-3,-2), (0,4), (3,2), (1,-5) }
- F= { (6,-3), (0,5), (4,-2), (1,-3) }

Save & Next

Find the function $f(x)$ such that $(fg)(x) = \dfrac{3}{x^3 - x}$, where $g(x) = \dfrac{3}{x - 1}$.

- $\dfrac{1}{x^2 - x}$.
- $\dfrac{1}{x^2 + x}$.
- $\dfrac{1}{x^2 - 1}$.
- $\dfrac{3}{x - 1}$.

B

Question No. 20

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

- $\left\{\dfrac{3}{2}, \dfrac{5}{2}\right\}$
- ϕ
- $\left\{\dfrac{5}{2}\right\}$
- $\left\{\dfrac{3}{2}\right\}$

Total questions in exam: 25 | Answered: 0

Question No. 22

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

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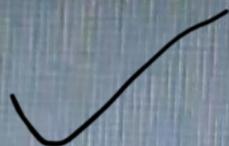- $x - a$ is a factor of the polynomial $f(x)$

Save & Next حفظ والتالي

The range of $f(x) = 4 - x^2$ is

- $(-\infty, 4)$
- $(4, \infty)$
- $(-\infty, 4]$
- $(-\infty, \infty)$

lve $\dfrac{x}{x+2} \geq \dfrac{3}{x+2}$
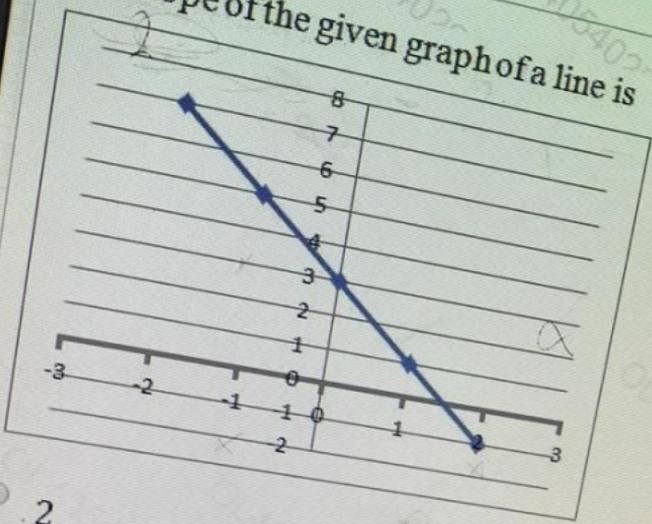
✓

$(-\infty, -2) \cup [3, \infty)$

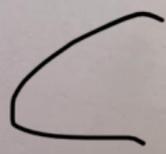$(-\infty, 2) \cup [3, \infty)$

$(-\infty, -2) \cup (3, \infty)$

$(-\infty, 2) \cup (3, \infty)$

Question No. 13

The slope of the given graph of a line is

- ○ .2
- ○ −3
- ○ −2
- ○ $\frac{-1}{2}$

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

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

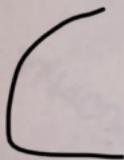If $p(x) = \sqrt{x+3}$ and $q(x) = \sqrt{x-4}$. Determine the domain of (p

○ $x \in (-3, 4)$

○ $x \in [-3, 4]$

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

○ $x \in [4, \infty)$

Question No. 1

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

- $\left(-\infty, 2a - \frac{1}{5}\right]$
- $\left(-\infty, 2a + \frac{1}{5}\right]$
- $\left(-\infty, 2a + \frac{1}{5}\right)$
- $\left[2a + \frac{1}{5}, \infty\right)$

Question No. 25

Let $b \in \mathbb{R}\backslash\{\frac{1}{4}\}$. Give the value of b such that the line $y = (4b-5)x + 2$ is perpendicular to the line $bx - y = 3$.

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

M1 = 4b -5   M2 = $\dfrac{-b}{-1}$ M2 = b

M1 . M2 = -1

(4b-5) . b = -1

4b*2 -5b = -1

4b*2 -5b +1 =0

Mode 5—3

b = 1 , b = 1/4

فالسؤال يقول b تساوي جميع الاعداد الحقيقه ماعدى 1/4 فالجواب يكون b=1

Save & Next حفظ رقمي

Compaq LE1711

Scientific Calculator
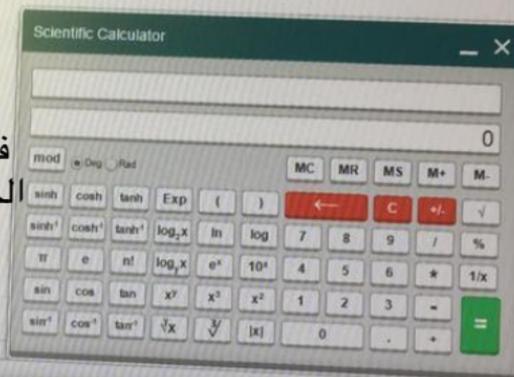
Question No. 2

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

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

F(-2) =6

نعوض ب 2- بالمعادله

الناتج بيطلع هكذا

5 + c = 6

C= 1

ثم نفك المربعين وبيطلع الجواب C

HP LE1901w

Question No. 5

The Solution set of $|7x - 8| + 8 < 1$ is

- $\left(-\infty, \frac{1}{7}\right) \cup \left(\frac{15}{7}, \infty\right)$
- $\emptyset$
- $\left(-\infty, \frac{1}{7}\right)$
- $\left(\frac{1}{7}, \frac{15}{7}\right)$
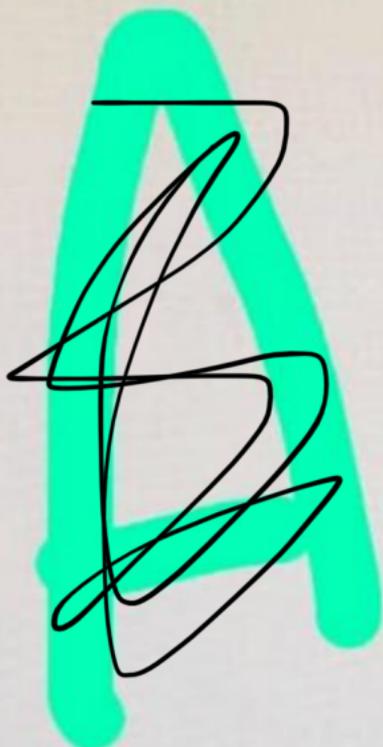
القيمه المطلقه
مستحيل تكون اقل
من عدد سالب
فالجواب فاي B

○ $a = -4$
○ $a = 5$
○ $a = -2$
○ $a = 2$

F (x) = 2 x*2 + ax - a*2

عوض X ب -2 وال a عوضها من الخيارات بحيث يكون الناتج 0 استبعد a=2 لانه بالسؤال طلب منك تستبعدها

الجواب a = -4

HP Compaq LE1711

Rewrite this absolute value inequality as a compound inequality

$$|11 + 4x| < 23$$

- ○ $-23 < 11 + 4x > 23$
- ○ $-23 > 11 + 4x < 23$
- ○ $-23 < 11 + 4x < 23$
- ○ $-23 > 11 + 4x > 23$

C

Save & Next حفظ والتالي

Question No. 7

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

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

Question No. 18

The solution set of the following equation: $|x-2| = 2x-7$ is
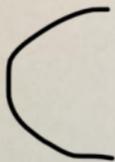
- $\{-4,3\}$
- $\{5\}$
- $\{3\}$
- ϕ

Save & Next حفظ وتالي

Question No. 8

The Solution set of $2 - |1 + \frac{x}{2}| \geq 5$ is

- $[-4, 8]$
- $(-\infty, -8] \cup [4, \infty)$
- $\emptyset$
- $(-\infty, \infty)$

The function $f(x) = 3x + x^2 - 6$ is

○ Linear
○ Cubic
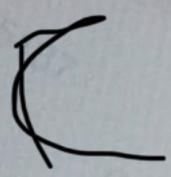○ Quartic
○ Quadratic

The slope of the line x= -3 is

- ○ -1
- ○ 0
- ⦿ Undefined
- ○ 1

Question No. 7

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

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

Save & Next حفظ والtali

Question No. 8

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

- ○ 4
- ○ 5
- ○ 2
- ● 3

13

Question No. 9

If $f(x)$ is a polynomial such that the remainder of the division $f(x) \div (x + 4)$ equals 10 then

- ◉ $f(-4) = 10$
- ○ $f(4) = 10$
- ○ $f(10) = 4$
- ○ $f(10) = -4$

A

Save & Next حفظ والتالي

Question No. 12

The degree of the quotient of the division $(x^8 - 4x^3 + x + 9) \div (x - 3)$ equals:

- ○ 8
- ○ 9
- ○ 6
- ○ 7

Save & Next حفظ والتالي

Scientific Calculator

mod	○ Deg ○ Rad				
sinh	cosh	tanh	Exp	(	)
sinh⁻¹	cosh⁻¹	tanh⁻¹	$\log_2 x$	ln	log
π	e	n!	$\log_y x$	e^x	10^x
sin	cos	tan	x^y	x^3	x^2
sin⁻¹	cos⁻¹	tan⁻¹	$\sqrt[x]{x}$	$\sqrt[3]{}$	|x|

HP Compaq LE1711

Total questions in exam: 25 | Answered: 4

Question No. 10

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

- ○ -3
- ○ 1
- ○ 0
- ○ 3

Save & Next حفظ و التالي

Scientific Calculator

mod	○ Deg ○ Rad			
sinh	cosh	tanh	Exp	
sinh⁻¹	cosh⁻¹	tanh⁻¹	$\log_2 x$	
π	e	n!	$\log_b x$	e
sin	cos	tan	x^y	x
sin⁻¹	cos⁻¹	tan⁻¹	$\sqrt[y]{x}$	$\sqrt[3]{}$

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Question No. 15

Given that $f(x) = 4^{3x-1} + 1$. Then $f(1) =$

- ○ 16
- ○ 14
- ○ 17
- ○ 15

Scientific Calculator

mod	● Deg ○ Rad		
sinh	cosh	tanh	Exp
sinh⁻¹	cosh⁻¹	tanh⁻¹	log₂x
π	e	n!	logₓx
sin	cos	tan	xʸ
sin⁻¹	cos⁻¹	tan⁻¹	ˣ√x

Save & Next   حفظ والتالي

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Question No. 14

The solution of $14 \leq 3x + 5 \leq 23$ is .....

- ◉ (-6,-3)
- ◉ [3,6]
- ◉ (3,6)
- ◉ [-6,-3]

Save & Next حفظ والي

Scientific Calcul

mod	◉ Deg ○ Ra	
sinh	cosh	ta
sinh⁻	cosh⁻	ta
π	e	
sin	cos	
sin⁻	cos⁻	

HP Compaq LE1711

Question No. 7

If x+1 is a factor of the polynomial f(x) then

$f(1) = 0$

$f(0) = -1$

$f(0) = 1$

$f(-1) = 0$

Question No. 5

Solve $|x - 4| < 7$

- $(-11, 11)$
- $(-11, 3)$
- $(-3, 11)$
- $(-3, 3)$

Question No. 6

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

- ○ $3a^2 + 8a + 4$
- ○ $3a^2 + 2a - 1$
- ○ $a^4 + 2a^2 - 1$
- ○ $a^2 + 2a - 1$

Save & Next حظ واڭلي

Scier

mod

sinh

sinh⁻¹

π

sin

sin⁻¹

Question No. 7

Find $(f \circ g)(x)$, where $f(x) = x^2 + x$, $g(x) = \sqrt{x-1}$.

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

Question No. 3

Determine the solution set of the following inequality

$$3 + x < \frac{1 - 3x}{2} \le x + 8$$

- (-3,-1]
- [-3,-1)
- [-1,3)
- (-1,3]

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

- $\frac{1}{4}(1 \pm i\sqrt{31})\}$
- $\frac{1}{3}(1 \pm i\sqrt{31})\}$
- $\frac{1}{3}(-1 \pm i\sqrt{31})\}$
- $\frac{1}{4}(-1 \pm i\sqrt{31})\}$

A

The equation $-3x^2 - 7x - 11 = 0$ has

- two rational roots
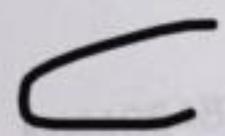- one repeated root
- two irrational roots
- two complex roots

D

Question No. 16

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

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

Question No. 20

Let $f(z) = z^2 + c$ and $g(z) = z$, give the value of c such that $f(z+1) = zg(z) + 2z$.

- $c = 0$
- $c = -1$
- $c = 4$
- $c = 1$

B

C= -1

The domain of the relation $y \le x - 1$ is
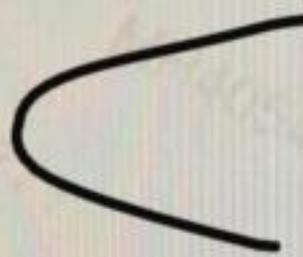
- $(4, \infty)$
- $[-4, \infty)$
- $(-\infty, \infty)$
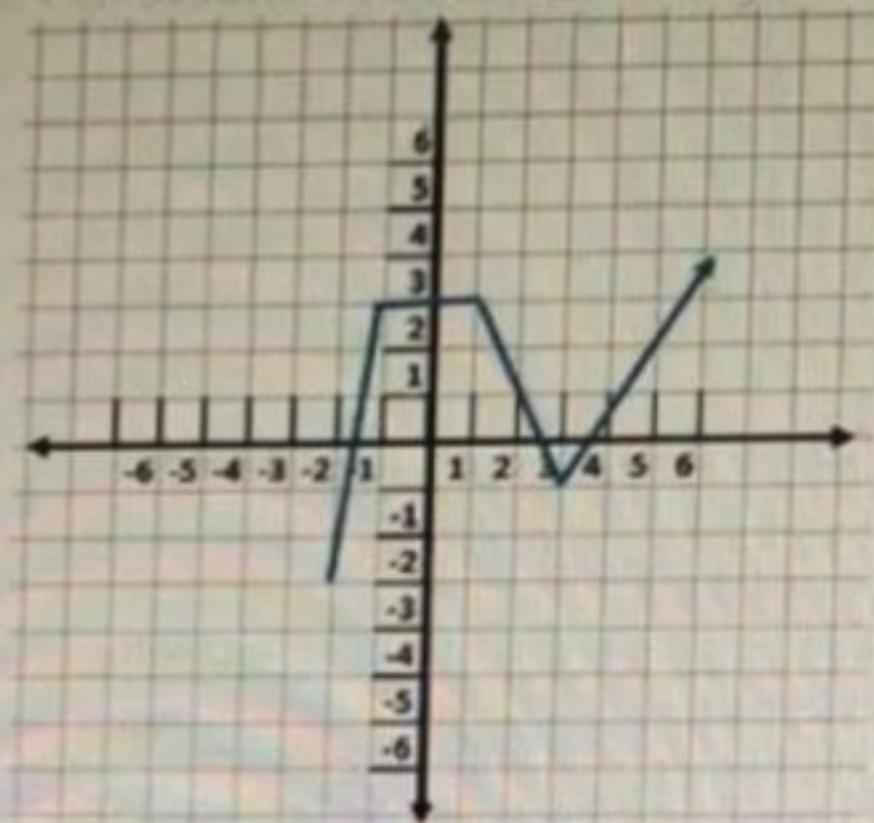- $[0, \infty)$

المتباينات يكون مجالها جميع الاعداد الحقيقيه

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

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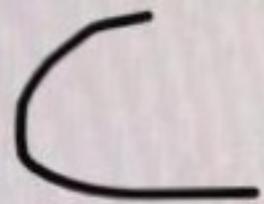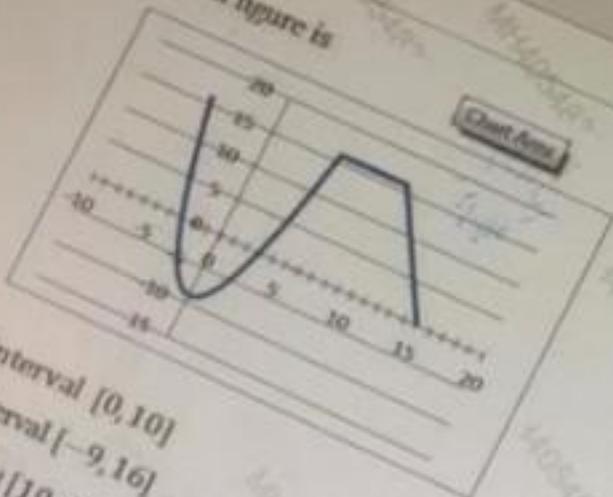- $R \setminus \{3\}$
- $R \setminus \{1\}$
- $R \setminus \{0\}$

Identify the intervals where this function is decreasing.

- (−∞, −1)
- (−1, 1)
- (1, 3)
- (3, ∞) ∪ (−2, −1)

Question No. 16

The function in the given figure is

- increasing on the interval [0, 10]
- decreasing on the interval [-9, 16]
- decreasing on [-5, 0] ∪ [10, 15]
- constant on the interval [5, 15]

Question No. 25

The solution set of $(x + 2)^2 = 3$ is

- Containing non real solutions
- $\{-2 \pm \sqrt{3}\}$
- $\{2 \pm \sqrt{3}\}$
- $\{\pm 2\sqrt{3}\}$

B

Question No. 21

The graph of $f(x) = ax^2 + bx + c$ represents
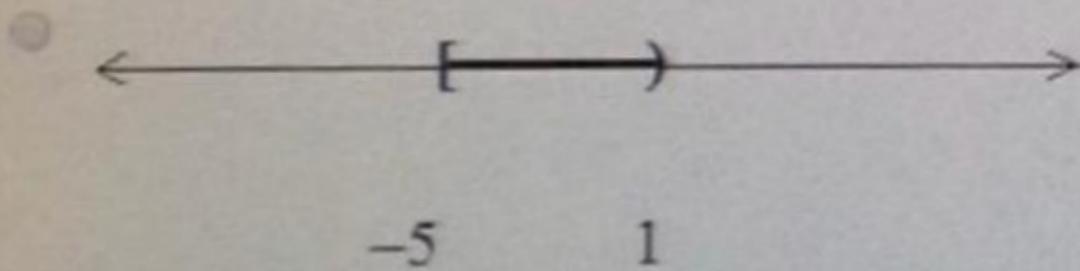
- Parabola
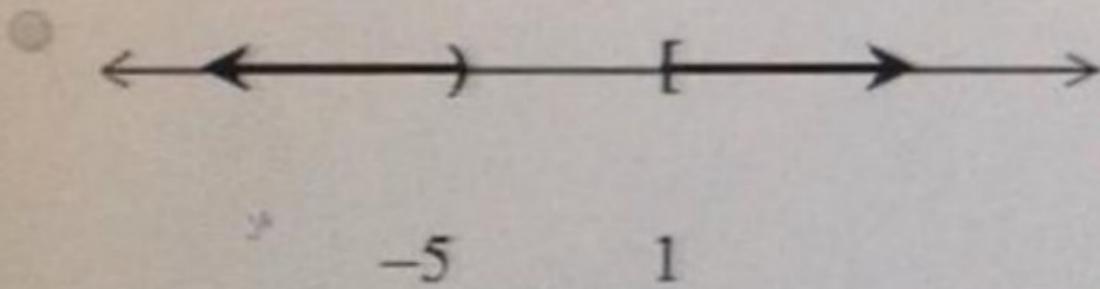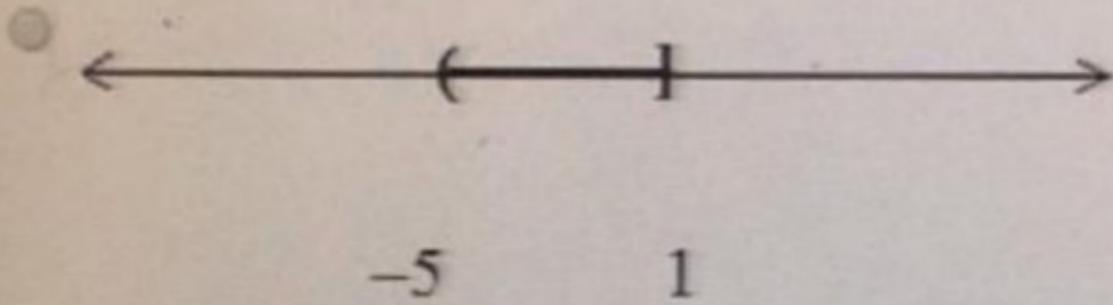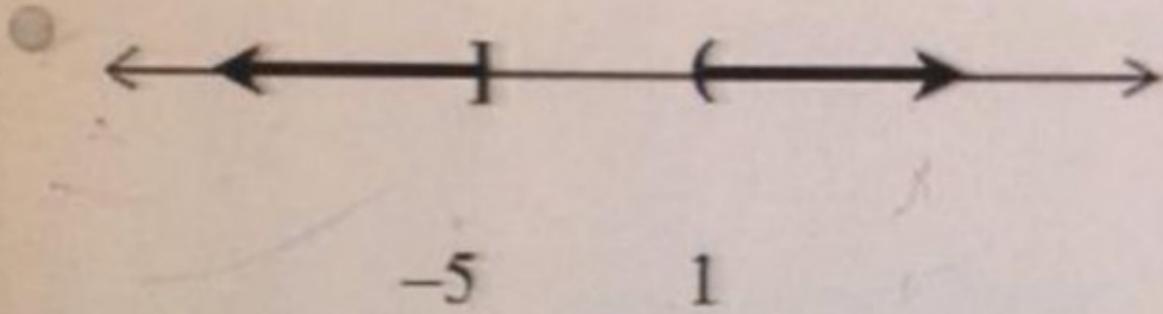- Circle
- Square
- Rectangle

A

Solve the inequality $|x^2 - 5x + 4| \leq 0$.

- $S = \{1, 4\}$
- $S = (1, +\infty)$
- $S = [4, +\infty)$
- $S = (1, 4)$

A

Question No. 25

Which of the following represent $x \leq -5 \text{ or } x > 1$

$-5 \qquad 1$

$-5 \qquad 1$

$-5 \qquad 1$

$-5 \qquad 1$

$-5 \qquad 1$

The solution set of $z^2 + i^2 = 0$ is
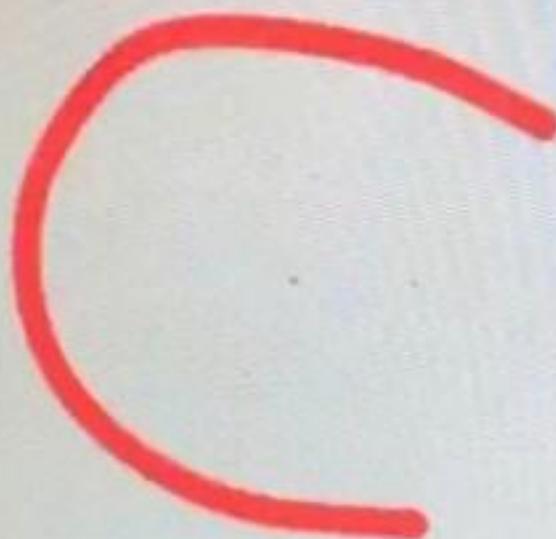
- $S = \{-1, +1\}$
- $S = \{+i\}$
- $S = \{-i, +i\}$
- $S = \{-i\}$

A

Question No. 11

Write the equation of the line passes through (-5,6), and prependicular to the line x = -2

- x = -5
- -5x + 6y = -2
- y = 6
- 5x + 6y = 2

Question No. 19

The solution set of the equation $x^2 - 1 = 2 + x^2$ is

- {0,1}
- 2
- {0}
- {-1}

B

لا يوجد حل فاي

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

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

A

The solution set of $ax^2 + bx + c = 0$ is

$S = \left\{ \dfrac{b - \sqrt{b^2 - 4ac}}{2a}, \dfrac{b + \sqrt{b^2 - 4ac}}{2a} \right\}$

$S = \left\{ \dfrac{-b - \sqrt{b^2 + 4ac}}{2a}, \dfrac{-b + \sqrt{b^2 + 4ac}}{2a} \right\}$

$S = \left\{ \dfrac{-b - \sqrt{b^2 - 4ac}}{2a}, \dfrac{-b + \sqrt{b^2 - 4ac}}{2a} \right\}$

$S = \left\{ \dfrac{-b - \sqrt{b^2 - 4ac}}{a}, \dfrac{-b + \sqrt{b^2 - 4ac}}{a} \right\}$

Question No. 1

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

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

Given the equation $4x - 10y = 20$ Write the line equation in the slope-intercept form

○ $y = \frac{2}{5}x - 20$

○ $y = -\frac{2}{5}x + 20$

○ $y = -\frac{2}{5}x + 2$

○ $y = \frac{2}{5}x - 2$

D

Total questions in exam: 25 | Answered: 8

Question No. 19

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

- ● Open down
- ○ Open up
- ○ Open left
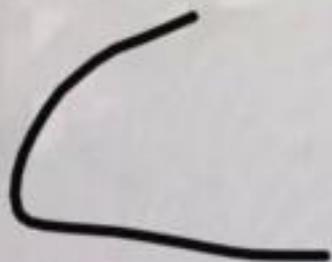- ○ Open right

A

Question No. 19

If $f(x) = -\sqrt{2}x$ then $f(x)$ is

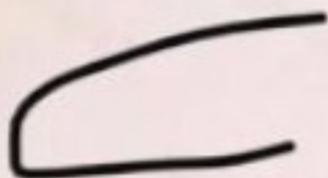- constant
- decreasing
- increasing
- not defined

The range of the relation $y = \dfrac{1}{x-1}$ is

- $(-\infty, \infty)$
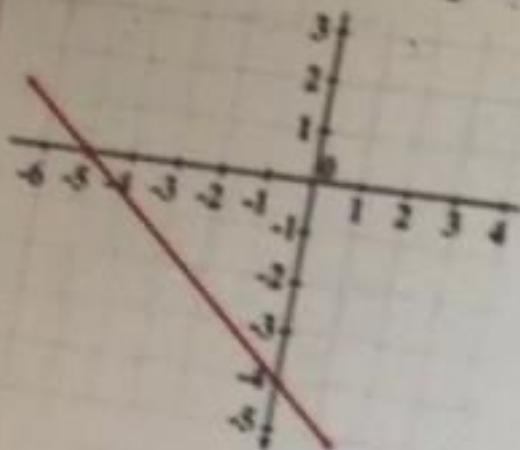- $[0, \infty)$
- $(-\infty, 0) \cup (0, \infty)$
- $[-1, \infty)$

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

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

What is the x-intercept of this graph?

○ Undefined

○ 0

○ -4

○ -5

Question No. 20

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

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

B

بالحاسبة جربو الخياري مكان الإكس لازم الطرفين يساوو بعض

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 فاكتور

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

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

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

○ $\left(-\infty, -\dfrac{4}{3}\right) \cup \left(\dfrac{1}{2}, \infty\right)$

○ $\left[-\dfrac{4}{3}, \dfrac{1}{2}\right)$

○ $\left(-\dfrac{4}{3}, \dfrac{1}{2}\right)$

○ $\left(-\infty, -\dfrac{4}{3}\right] \cup \left(\dfrac{1}{2}, \infty\right)$

Which of the following functions is one-to-one

- F= { (3,5), (6,0), (3,-2), (1,-5) }
- F= { (-3,-2), (0,4), (3,-2), (1,-5) }
- F= { (4,-3), (1,0), (5,-2), (1,-3) }
- F= { (-3,-3), (0,0), (4,-2), (1,-5) }
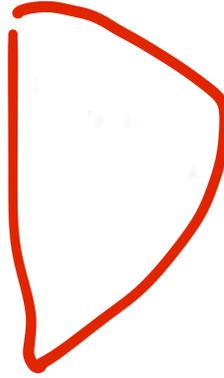
عشان تكون ون تو ون لازم الاكس والواي الاثنين مايتكررو

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 $f(x)$ an

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 ثابته لما الإكس
يكون مختلف وقيمة الواي
نفسها

Question No. 26

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

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

B

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

القوس في اصفار للمقام
مايكون مغلق انتبهو اذا عمهم

عمهم

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 $f(x) = x$.

A
كلام ثابت ــــــ

Which of the following equations has solutions a and b?

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

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

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

○ 4

○ 0

● $\dfrac{1}{4}$

○ $\dfrac{1}{2}$

$C \quad \dfrac{1}{4}$ إجابة صحيحة

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 $\dfrac{-3}{2}(2x-1) = 7$ ✓

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 $(-\infty, \infty)$

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)

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

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

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

$$x = \frac{-6}{2a} = \frac{-24}{2(1)}$$

$$= -1$$

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

$$= -115$$

Question No. 8

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

- $[2a + \frac{1}{5}, \infty)$
- $(-\infty, 2a + \frac{1}{5}]$
- $(-\infty, 2a - \frac{1}{5}]$
- $(-\infty, 2a + \frac{1}{5})$

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

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

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

○ $y = \dfrac{-1}{2}$

○ $x = \dfrac{1}{2}$

○ $x = \dfrac{-1}{2}$

○ $y = \dfrac{1}{2}$

B

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

- $\{-1\}$
- $\{-1,1\}$
- $\{1\}$
- ϕ

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

- $3a^2 + 2a - 1$
- $a^2 + 2a - 1$
- $3a^2 + 8a + 4$
- $a^4 + 2a^2 - 1$

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

- $(-\infty, -4] \cup (4, \infty)$

- $[-4, 4)$

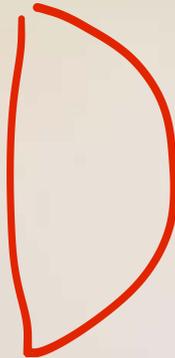- $(-\infty, -4) \cup [4, \infty)$

- $(-4, 4]$

Question

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

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

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

○ $a \in \{1, 5, -2\}$

○ $a \in \mathbb{R}\backslash\{5, 3, 2\}$

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

Let $a \in R$ 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

- $\{-4, -2\}$
- $\{-4, 6\}$
- ϕ
- $\{2, 4\}$

B

$$\frac{-|x-1| = -5}{-1} = \frac{-5}{-1}$$

$= 5$

Case 1

$x - 1 = 5$ $x - 1 = -5$

$x = 6$ $x = -4$

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

- ϕ
- $\left\{ \frac{a}{2}, -\frac{a}{4} + \frac{a\sqrt{3}}{4}i, -\frac{a}{4} - \frac{a\sqrt{3}}{4}i \right\}$
- $\left\{ \frac{a}{2}, -\frac{a}{8} + \frac{a\sqrt{3}}{8}i, -\frac{a}{8} - \frac{a\sqrt{3}}{8}i \right\}$
- $\left\{ \frac{a}{2} \right\}$

The function has an invers:

○ None of these answers

○ It is quadratic

○ It is one-to-one

○ doesn't satisfy the horizontal line test

بس الون تو ون 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 $f(x) = x^2 - 1$, $g(x) = x^2 + 3$

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

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

B

○ y = -1
○ y = -3
○ x = -3
○ x = -1

يعني تجمعهم وينحل بالحاسبه + = Sum

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

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

○ $(f+g)(x) = \dfrac{7}{x+3}$

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

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

اضربو ووحدو
مقامات

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

○ $\left\{\dfrac{5}{2}\right\}$

○ $\left\{\dfrac{3}{2}\right\}$

○ $\left\{\dfrac{3}{2},\dfrac{5}{2}\right\}$

○ ϕ

بالحاسبة عوضو
مكان الإكس

B

The slope of the vertical line is

- 1
- 0
- Undefined
- -1

يعني مستقيم قائم معادلتو إكس فميله غير معرّف

Question No. 16

Solve $x^2 + 6x < 7$

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

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. 11

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

- $-\dfrac{11}{6}$
- $\dfrac{11}{6}$
- $-\dfrac{6}{11}$
- $\dfrac{6}{11}$

A

قانون الميل فرق الواي
على فرق الإكس

Question No. 24

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

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

$y \leq k$

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

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

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 $x \in [0, \infty)$.

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

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

- $(f \cdot g)(x) = \dfrac{12}{x-10}$

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

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

C

مضروبهم

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

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

B

المجال والمدى للمعادلة الخطية جميع الأعداد الحقيقية ومجال المعكوس ياخذ مدى الدالة الأصلية

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

- $\left\{ \dfrac{a-1\pm\sqrt{a^2-3a+5}}{2} \right\}$
- $\left\{ \dfrac{a-1\pm\sqrt{a^2-3a-1}}{2} \right\}$
- $\left\{ \dfrac{1-a\pm\sqrt{a^2-3a+5}}{2} \right\}$
- $\left\{ \dfrac{1-a\pm\sqrt{a^2-3a-1}}{2} \right\}$

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

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

- $\{3\}$
- ϕ
- $\{5\}$
- $\{-4,3\}$

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 $x^2(x - 1)(x - 2) \leq 0$

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

Determine the solution set of the following inequality

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

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

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

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

Question No. 11

The vertex of the graph of $f(x) = -2x^2 + 4x - 1$ is

○ (1,1)
○ (2,-1)
○ (0,-1)
○ (-1,-7)

A

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Question No. 12

The range of the function $f(x) = 3(x - 4)^2 - 5$ is

○ $[5, \infty)$
○ $(-\infty, 5]$
○ $(-\infty, -5]$
○ $[-5, \infty)$

Save & Next حفظ والتالي

Question No. 14

If $f(x)$ is a polynomial such that $f(1) = 6$ then the remainder of the division $f(x) \div (x - 1)$ equals:

- ○ -6
- ○ -1
- ○ 1
- ◉ 6

Question No. 12

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

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

The equation of the given line is
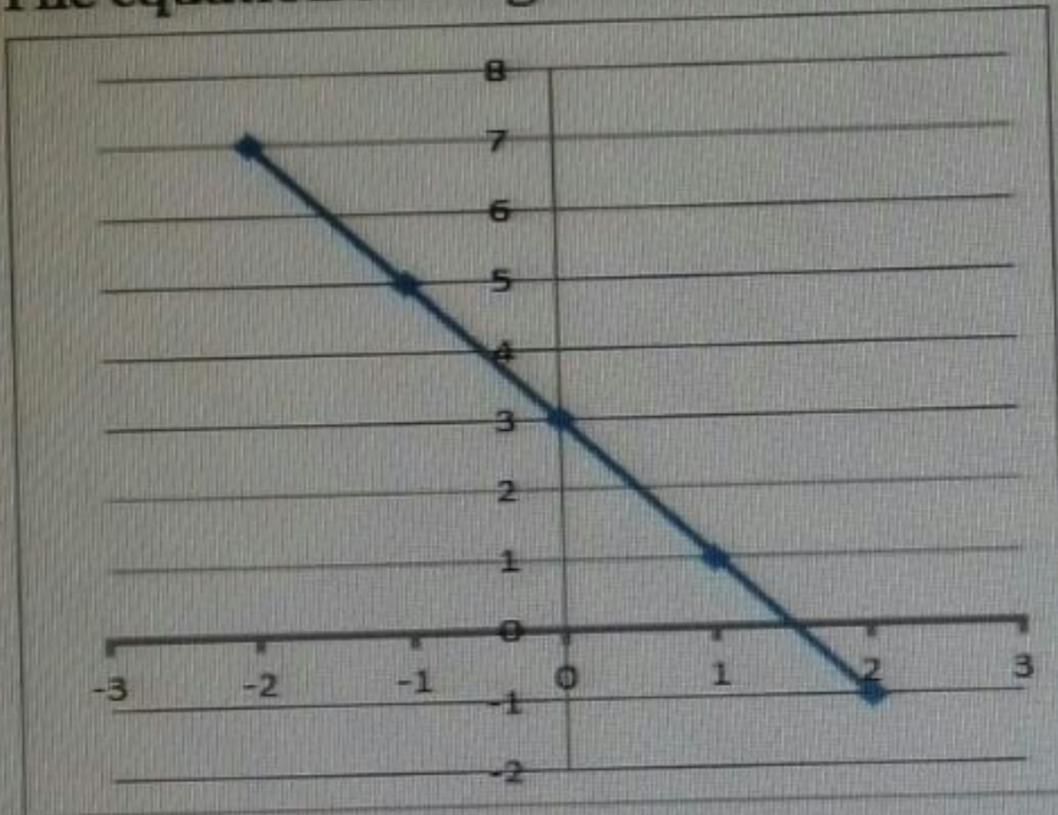
- y= -2x + 3
- y = -2x - 1
- y = 2x + 1
- y = 2x - 3

A

Question No. 13

The quotient of the division $(5x^3 - 6x^2 - 28x - 2) \div (x + 2)$ is

- $5x^2 - 16x + 4$
- $5x^2 + 16x$
- $5x^2 - 16x - 4$
- $5x^2 - 16x$
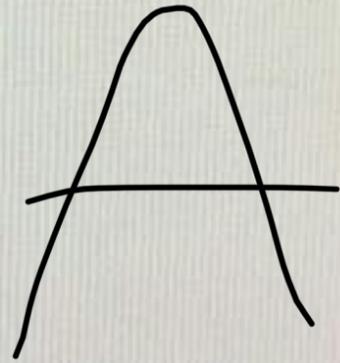
Save & Next معظ والثاني

Question No. 21

The solution set of the following equation: $|4-x|=-3$ is

- $\left\{3, \dfrac{11}{6}\right\}$
- ϕ
- $\left\{\dfrac{5}{6}, \dfrac{11}{6}\right\}$
- $\left\{\dfrac{4}{6}, \dfrac{1}{6}\right\}$

Question No. 13

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

- 4
- 2
- 3
- 5
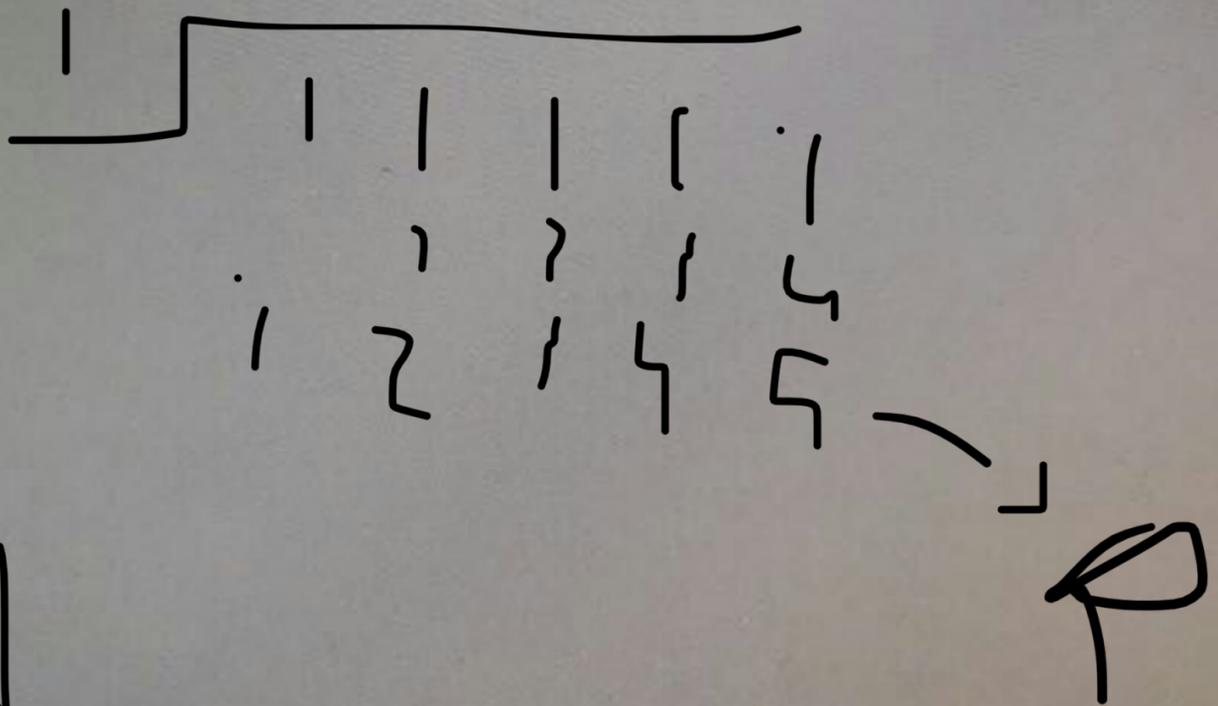
Question No. 1

The domain of $f(x) = x - 1$ is

- $(-\infty, -1)$
- $(-\infty, 0)$
- $(-\infty, \infty)$
- $(1, \infty)$

Question No. 9

If $f(x) = 3x + 4$ and $g(x) = x - 1$. The domain of $\left(\frac{g}{f}\right)(x)$ is

- ○ $(-\infty, -1) \cup (-1, \infty)$
- ○ $(-\infty, 1) \cup (1, \infty)$
- ○ $\left(-\infty, \frac{-4}{3}\right) \cup \left(\frac{-4}{3}, \infty\right)$
- ○ $(-\infty, \infty)$

Question No. 7

Find $(f \circ g)(x)$, where $f(x) = x^2 + x$, $g(x) = \sqrt{x-1}$.
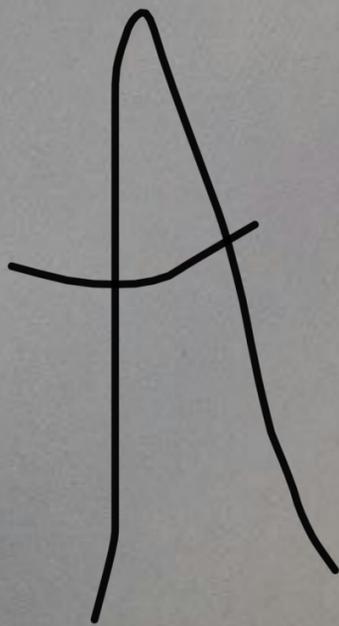
- $x - 1 + \sqrt{x-1}$
- $2x - 1$
- $\sqrt{x^2 + x - 1}$
- $x - 1 + \sqrt{x}$

Math_

Question No. 10

What is the equivalent equation of $x^2 - 6x + 2 = 0$ by completing the square?

- $(x - 3)^2 - 7 = 0$
- $(x + 3)^2 - 11 = 0$
- $(x - 3)^2 - 11 = 0$
- $(x - 6)^2 + 2 = 0$

Question No. 11

The domain of the function $f(x) = x^2 - 4x + 7$ is

- $(-\infty, 7]$
- $(-\infty, \infty)$
- $[7, \infty)$
- $[-4, \infty)$

b

Question No. 18

Solve $15 - 3x \geq 0$

- ○ $(-\infty, 5]$
- ○ $(-\infty, -5]$
- ○ $[-5, \infty)$
- ○ $[5, \infty)$

Question No. 9

If $f(x) = \sqrt{x+2}$ and $g(x) = 3x - 5$. The domain of $(f \circ g)(x)$ is

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

Question No. 13

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

- $H(x) = \sqrt{x-1}$
- $H(x) = \sqrt{x+1}$
- $H(x) = \sqrt{(x+3)(x-4)}$
- $H(x) = (x+3)(x-4)$

Question No. 19

Solve $1 < 7 - x < 10$

- ○ (-3,6)
- ○ (-6,3)
- ◉ (3,6)
- ○ (-6,-3)

Question No. 6

Which of the following is a vertical line:

- $5y - \frac{1}{2}x + 1 = 0$
- $3y - x = 0$
- $y = \frac{1}{2}$
- $x = -2$

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Question No. 10

Which is the equation for this graph?
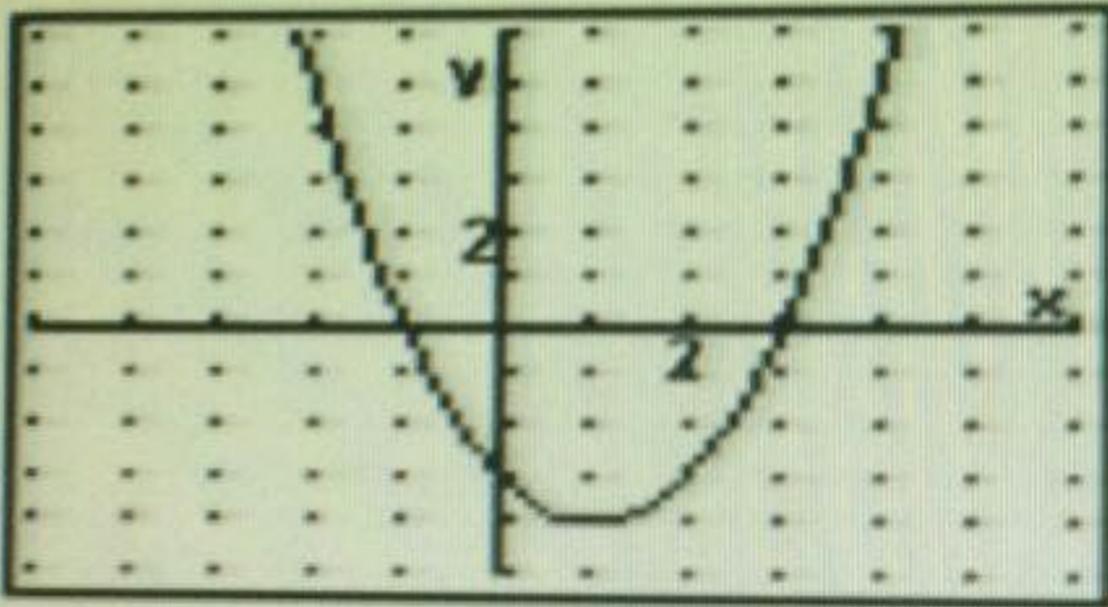
- $y = -x^2 - 4$
- $y = -x^2 + 2x + 4$
- $y = -x^2 - 2x - 4$
- $y = x^2 - 2x - 3$

Question No. 12

The vertex of the Quadratic function $f(x) = 2x^2 - 3x + 1$ is

- $\left(-\dfrac{1}{8}, \dfrac{3}{4}\right)$
- $\left(\dfrac{3}{4}, -\dfrac{1}{8}\right)$
- $\left(\dfrac{3}{4}, \dfrac{17}{8}\right)$
- $\left(\dfrac{1}{8}, \dfrac{3}{4}\right)$

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Question No. 12

The range of $f(x) = 4 - x^2$ is

○ $(-\infty, 4)$

○ $(4, \infty)$

○ $(-\infty, 4]$

○ $(-\infty, \infty)$
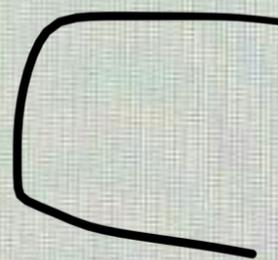
Question No. 1

The domain of $f(x) = \sqrt{2x-1}$ is

- $(-\infty, \infty)$
- $R\backslash\{0.5\}$
- $[0.5, \infty)$
- $(0.5, \infty)$
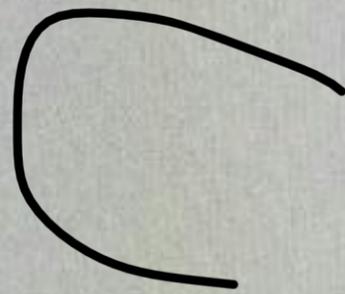
Question No. 13

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

- ○ 2
- ○ 4
- ○ 5
- ○ 3

Question No. 15

The quotient of the division $\dfrac{x^3-1}{x-4}$ is:

- $x^2 + 4x + 14$
- $x^2 + 4x + 13$
- $x^2 + 4x + 16$
- $x^2 + 4x + 15$

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P LE1901w

Question No. 22

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

- $\left\{-\dfrac{1}{2},\dfrac{3}{4}\right\}$

- $\left\{\dfrac{1}{2},-\dfrac{3}{4}\right\}$

- $\left\{\dfrac{1}{2},\dfrac{3}{4}\right\}$

- ϕ

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Question No. 20

Solve $x^2 + 3x - 4 < 0$

- ○ $(-1, 4)$
- ○ $(-4, 1)$
- ○ $(-\infty, -1) \cup (4, \infty)$
- ○ $(-\infty, -4) \cup (1, \infty)$

Save & Next حفظ والتالي

Solve $x^2 + x > 6$

- (−3,2)
- $(-\infty, -2) \cup (3, \infty)$
- $(-\infty, -3) \cup (2, \infty)$
- (−2,3)

Solve $15 - 3x \geq 0$

○ $(-\infty, -5]$

⦿ $[5, \infty)$

○ $(-\infty, 5]$

○ $[-5, \infty)$

The function $f(x) = x^2 + 6x + 8$ is equivalent to

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

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The solution set of $-2 < 3 - 5x \leq 18$ is

- [-3,1]
- (-∞,1)
- (-3,∞)
- (-3,1)

Math

Question No. 4

The slope of the line $4x - 3y = 12$ is

- $-\frac{4}{3}$
- Undefined.
- $\frac{4}{3}$
- 12
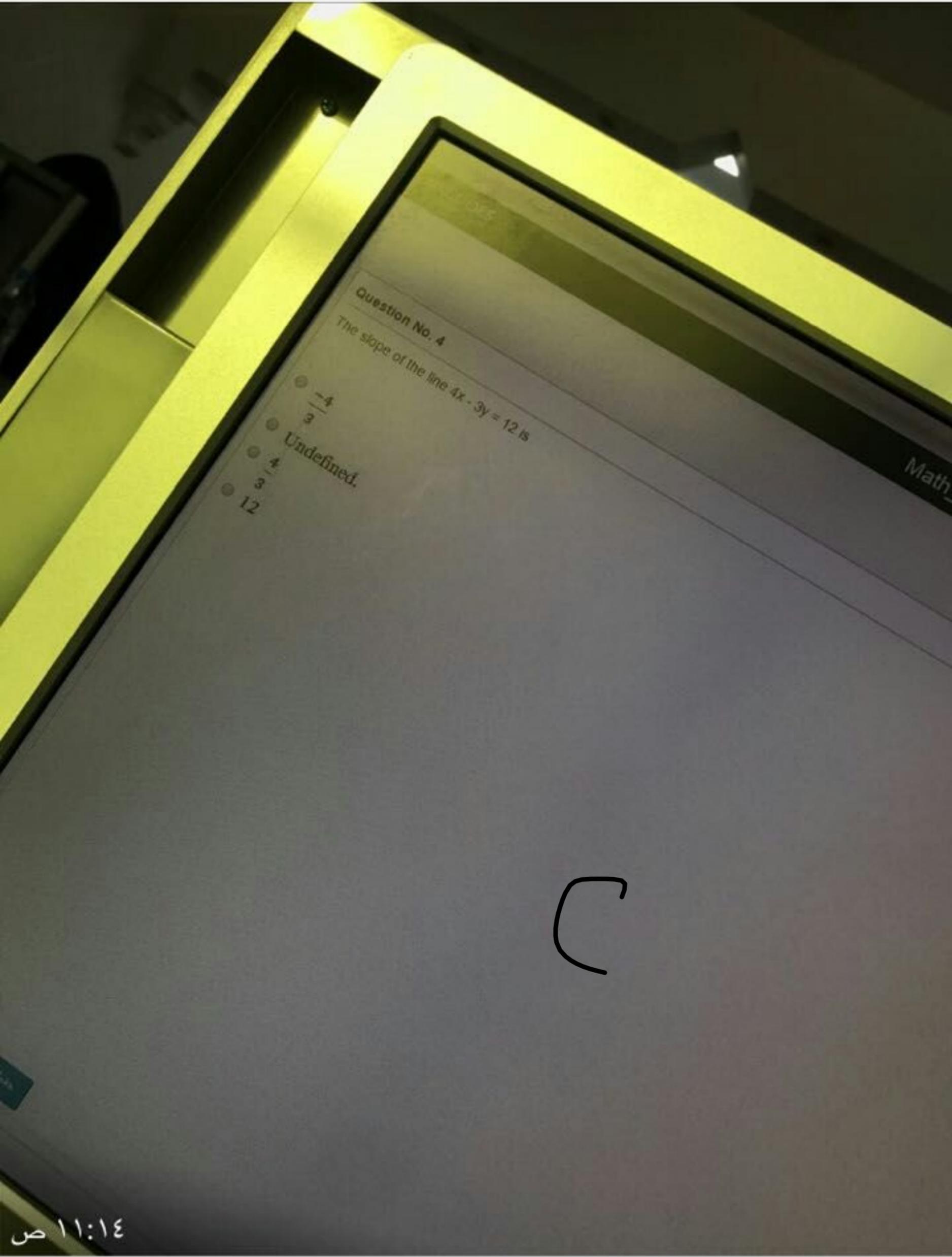
Question No. 15

The quotient of the division $\dfrac{x^3-5}{x-3}$ is:

- $x^2 + 3x + 7$
- $x^2 + 3x + 6$
- $x^2 + 3x + 9$
- $x^2 + 3x + 8$

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Question No. 12

The range of the function $f(x) = 3(x - 4)^4 - 5$ is

- $[-\infty, 5]$
- $(-\infty, -5]$
- $[5, \infty)$
- $[-5, \infty)$

$(-5, \infty]$

HP L1710

Question No. 19

The solution set of $-5 \le 3x - 2 \le 1$ is

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

b

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Question No. 8

If $p(x)=\sqrt{x+3}$ and $q(x)=\sqrt{x-4}$. Evaluate $(p \cdot q)(5)$.

- 8
- 2
- $2\sqrt{2}$
- undefined

Question No. 24

Which of the following functions is not one to one

- $f(x) = 3x^3$
- $f(x) = -5x$
- $f(x) = -9x^2$
- $f(x) = \sqrt{5x}$

INSTRUCTION: اختيار Please choose the BEST answer from the given options f

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

Options:

○ $f^{-1}(11) = -1$

○ $f^{-1}(2) = -11$

○ $f^{-1}(-2) = -11$

○ $f^{-1}(11) = -2$

Submit Answer

Question No. 4

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

- ○ -2
- ○ -3
- ○ -5
- ○ 2

Question No. 22

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

○ {1}

○ {1,−1}

○ ϕ

○ {−1}

b

Question No. 21

The solution set of the following equation: $\mid 7+3x \mid +9 = 5$ is

- $\left\{\dfrac{4}{5}, \dfrac{8}{5}\right\}$

- $\left\{\dfrac{11}{5}, \dfrac{21}{5}\right\}$

- ϕ

- $\{4,7\}$

$5 - 9 = -4$

C

MRCL OES

Question No. 14

If $f(x)$ is a polynomial such that the remainder of the division $f(x) \div (x + 4)$
equals 10 then

- $f(4) = 10$
- $f(10) = -4$
- $f(-4) = 10$
- $f(10) = -4$

C

Question No. 7

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

- $2x^2 - 2x + 10$
- $-3x^2 - 2x - 7$
- $2x^2 - 2x - 14$
- $-3x^2 - 2x - 1$

A

Question No. 10

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

- $y = (x + 12)^2 - 173$
- $y = (x + 12)^2 - 115$
- $y = (x - 12)^2 - 173$
- $y = (x - 12)^2 - 115$

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Question No. 24

Which of the following functions is not one to one

- $f(x) = -5x + 5$
- $f(x) = 80 + 106x$
- $f(x) = 13x$
- $f(x) = \sqrt{49 - x^2}$

Question No. 17

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

- ○ x + 2
- ○ x - 2
- ○ x + 1
- ○ x - 1
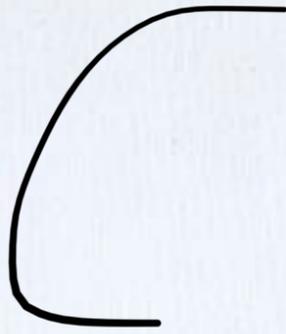
Question No. 16

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

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

Question No. 6

Find the slope of the line $3x - \sqrt{3}y = \sqrt{2}$

- $\sqrt{3}$
- Undefined.
- 3
- $\sqrt{2}$

$$\frac{-3}{-\sqrt{\text{د}}}$$

A

HP LE1901w

Question No. 20

Solve $x^2 + 3x - 4 < 0$

- ○ $(-1, 4)$
- ○ $(-4, 1)$
- ○ $(-\infty, -1) \cup (4, \infty)$
- ○ $(-\infty, -4) \cup (1, \infty)$

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Question No. 17

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

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

Question No. 16

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

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

Question No. 3

The range of the relation $y = \dfrac{1}{x-1}$ is

○ $[-1, \infty)$

○ $(-\infty, \infty)$

○ $(-\infty, 0) \cup (0, \infty)$

○ $[0, \infty)$

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Question No. 2

If $f(x) = -\sqrt{2}$ then $f(x)$ is

- ○ constant
- ○ increasing
- ○ decreasing
- ○ not defined

Question No. 11

Write an equation of the line that passes through the point (0,0) and perpendicular to the line $3x-2y=0$

- $3y + 2x = 0$
- $2y - 3x = 0$
- $3y - 2x = 0$
- $2y + 3x = 0$

A

Question No. 6

The slope of the vertical line that passes through the point (3,2) is

- 3
- 0
- 2
- undefined

d

Question No. 23

The range of the inverse of G = {(-1, 10), (0, 29), (8, 66), (-9, 55)} is

- ● {-1, 0, 8, -9}
- ○ {-1, 11, 8, -9}
- ○ (10, 29, 66, 55)
- ○ {-1, 0, 5, -9}

A

Question No. 18

Solve $-4x + 3 > -9$

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

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Question No. 1

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

- ○ $\dfrac{1}{4}$
- ○ $\dfrac{1}{2}$
- ○ 4
- ○ 0
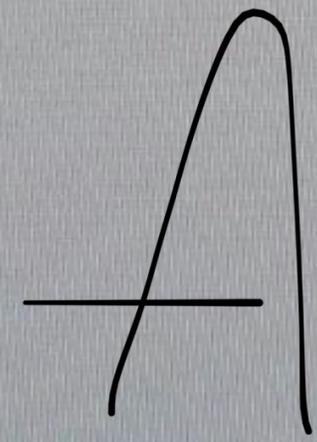
Question No. 11

Write the equation of the line passes through (–5,6), and prependicular to the line x = -2

- ○ x = -5
- ○ -5x + 6y = -2
- ○ y = 6
- ○ 5x + 6y = 2
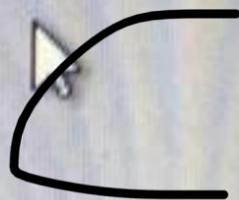
Question No. 2

Which of the following is not a function?

- ○ $y = 4x - 6$
- ○ $y = x + 4$
- ○ $y^2 = x$
- ○ $3y = 5x$
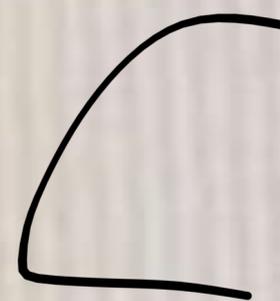
Question No. 3

The function in the given figure is
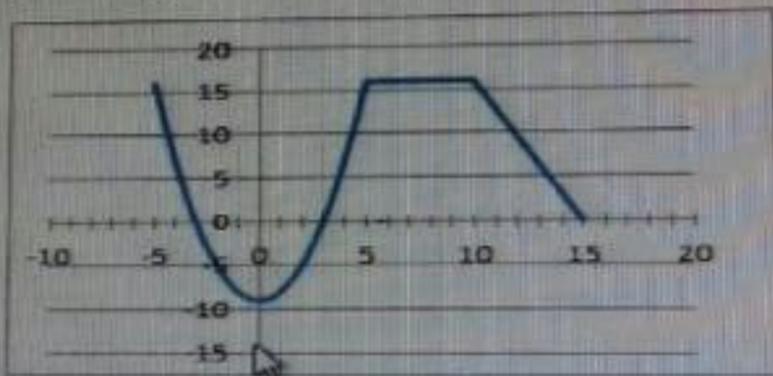
○ increasing on the interval [0, 5]

○ increasing on the interval [-9, 16]

○ constant on the interval [0, 10]

○ decreasing on [-5, 15]

Question No. 15

The quotient of the division $\dfrac{x^3-7}{x-2}$ is:

- $x^2 + 2x + 3$
- $x^2 + 2x + 5$
- $x^2 + 2x + 4$
- $x^2 + 2x + 2$

Write an equation of the line that passes through the point $(0,0)$ and has slope $-\frac{1}{2}$

- $x + 2y = 0$
- $x - 2y = 0$
- $x - \frac{1}{2}y = 0$
- $x + \frac{1}{2}y = 0$

A

Question No. 15

Which of these quadratic functions has the narrowest graph?

- $y = -3x^2$
- $y = \frac{1}{3}x^2$
- $y = -4x^2$
- $y = \frac{1}{7}x^2$

C

Question No. 25

A function f(x) is one to one if

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

C

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Question No. 3

The range of $f(x) = -x^2$ is

- $[-1, \infty)$
- $(0, \infty)$
- $(-\infty, -1]$
- $(-\infty, 0]$

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Question No. 4

The Solution set of $\frac{1}{9}|x - 7| = 7$ is

○ {56,70}

○ {70,-56}

○ {70,-70}

○ {56,-56}

B

ب

The function $f(x)$ is increasing 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 $x_1 < x_2$, 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 $f(x_1) \leq f(x_2)$,
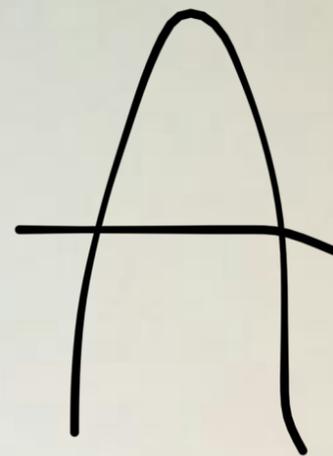
Question No. 8

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

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

Question No. 3

Identify the intervals where this function is decreasing.

- $(-\infty, -1)$
- $(3, \infty) \cup (-2, -1)$
- $(-1, 1)$
- $(1, 3)$
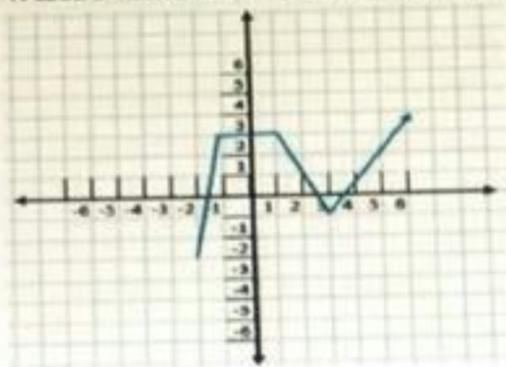
The axis of the graph of $f(x) = x^2 - x + 1$ is

○ $x = \dfrac{1}{2}$

○ $y = \dfrac{-1}{2}$

○ $x = \dfrac{-1}{2}$

○ $y = \dfrac{1}{2}$

A

If $f(x)$ is a polynomial such that the remainder of the division $f(x) \div (x+4)$ equals 10 then

○ $f(10) = 4$

○ $f(4) = 10$

○ $f(10) = -4$

○ $f(-4) = 10$
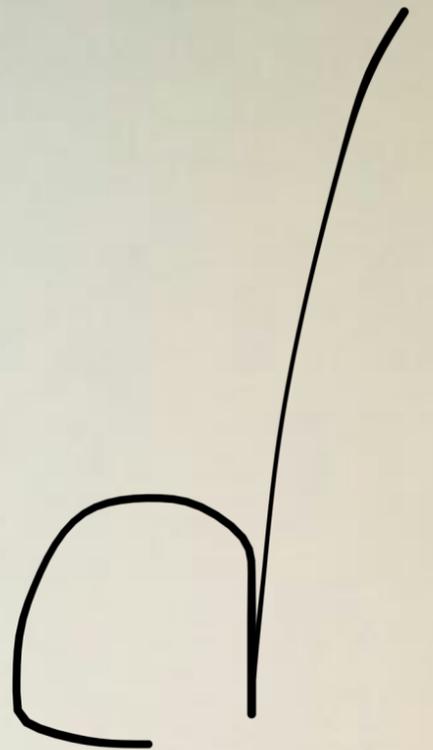
Question No. 3

The domain of $f(x) = \dfrac{1}{\sqrt{x^2 - 1}}$ is

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

Question No. 2

If $f(x) = x^3 + 2x^2 - 1$ then $f(a^4) =$

- ⚪ $a^{12} + 2a^8 - 1$
- ⚪ $a^9 - 1$
- ⚪ $a^7 + 2a^6 - 1$
- ⚪ $a + 2a^{-1} - 1$

Question No. 1

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

- ○ $(a-2)(a^3 - 3a + 3)$
- ○ $(a^3 - 2^3)(a^2 - 3a + 3)$
- ○ $(a-2)(a^2 - a + 1)$
- ○ $(a-2)(a^2 - 3a + 3)$

حفظ واتلي Save & Next

stion No. 3

etermine the solution set of the following inequality

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

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

B

ﺡ

Question No. 2

The function $f(x)$ is decreasing 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 $x_1 > x_2$, 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 $f(x_1) > f(x_2)$,

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Question No. 3

Identify the intervals where this function is increasing.

- $(-3, \infty)$
- $(-3, -2)$
- $(-2, \infty)$
- $(-2, 2)$

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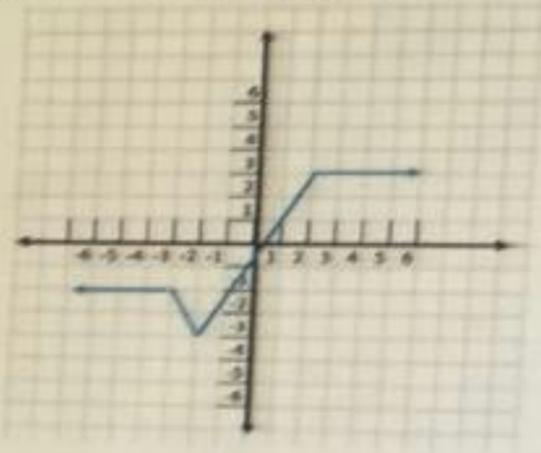
Question No. 7

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

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

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Question No. 1

The domain of $f(x) = x^2 - 2x + 1$ is

- $(-4,2)$
- $(-\infty,8)$
- $(0,\infty)$
- $(-\infty,\infty)$

Question No. 3

The range of $f(x) = x^2 - 49$ is

- ○ $[-49, \infty)$
- ○ $[-7, 7]$
- ○ $(-\infty, \infty)$
- ○ $[-7, \infty)$

A

The range of the relation $y \leq x - 1$ is

- $[0, \infty)$
- $(4, \infty)$
- $(-\infty, \infty)$
- $[-4, \infty)$
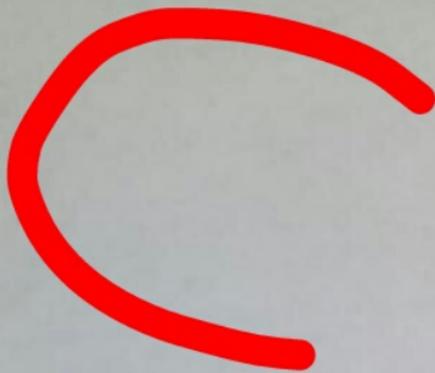
Question No. 9

The slope of the line through the points $(x_1, y_1), (x_2, y_2)$

○ $\dfrac{y_2 - y_1}{x_2 + x_1}$

○ $\dfrac{y_2 + y_1}{x_2 + x_1}$

○ $\dfrac{y_2 - y_1}{x_2 - x_1}$

○ $\dfrac{y_2 + y_1}{x_2 - x_1}$

The solution set of the following equation: $\left| 2x - 7 \right| = 9$ is

- {8,1}
- {3,9}
- {8,-1}
- {4,3}

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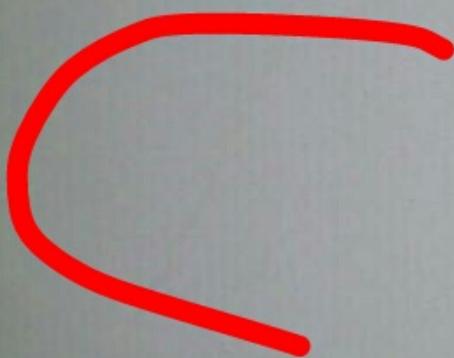
Question No. 4

The solution set of the following equation: $\left| 72x - 8 \right| = -12$ is

○ $\left\{ \dfrac{2}{9}, \dfrac{4}{9} \right\}$

○ $\{3\}$

○ ϕ

○ $\{6, 12\}$

Save & Next
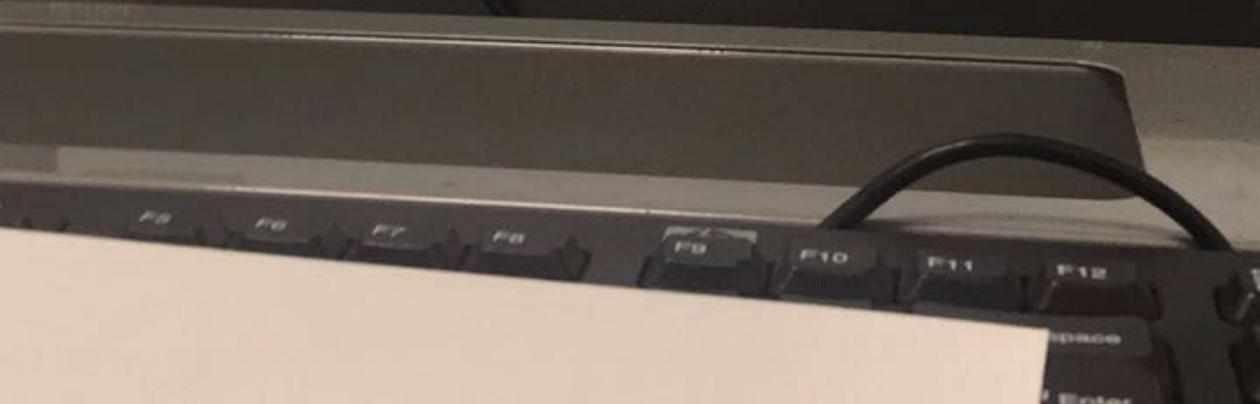
Question No. 10

The slope of the line x= -3 is

- ○ 1
- ○ -1
- ○ 0
- ○ Undefined

Question No. 4

Solve $|-7x + 14| = 0$

- ○ {2}
- ○ {-2,2}
- ○ {-2}
- ○ No solution

If $f(x) = 2x^2 + 3$ and $g(x) = \sqrt{x+1}$, then the domain of $(fg)(x)$ is

○ $[-1, \infty)$
○ $[-\infty, 0]$
○ $(0, 9)$
○ $(-\infty, \infty)$

Question No. 11

The solution set of the following equation: $|2x + 5| = |x + 4|$ is

- $\{1,3\}$
- $\{-3,-1\}$
- $\{3,-1\}$
- ϕ

Question No. 25

If $f(x) = 2x + 4$, then

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

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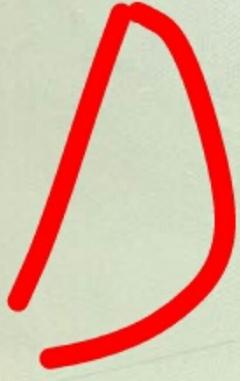
Question No. 1

Solve this quadratic inequality $x^2 - x - 20 > 0$

- $(-4, 5)$
- $(-\infty, -5) \cup (4, \infty)$
- $(-5, 4)$
- $(-\infty, -4) \cup (5, \infty)$

Question No. 13

If $f(x) = 5x^2 + 5x + 3$ and $g(x) = 3x^2 + 10x + 6$. Find $h(x) = f(x) - g(x)$.

- $h(x) = 2x^2 - 5x + 1$
- $h(x) = -2x^2 + 5x + 3$
- $h(x) = 2x^2 - 5x - 3$
- $h(x) = -2x^2 + 5x + 1$

Question No. 2

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

- $(-\infty, -4] \cup (4, \infty)$
- $(-\infty, -4) \cup [4, \infty)$
- $(-4, 4]$
- $[-4, 4)$
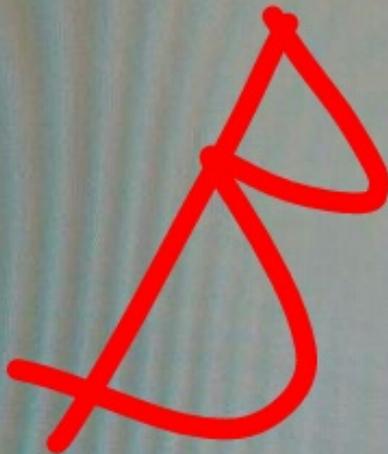
Question No. 10

The Solution set of $\frac{|x-18|}{4} \geq -16$ is

- $(-\infty, \infty)$
- $\emptyset$
- $(-\infty, -46] \cup [84, \infty)$
- $(-\infty, -84] \cup [46, \infty)$

Question No. 19

The graph of $f(x) = x^2 - 6x + 9$ has

- ● Two x-intercepts
- ○ No x-intercept
- ○ Nine x-intercepts
- ○ One x-intercept

Save & Next

Question No. 11

Write the equation of the line passes through (−5,6), and prependicular to the line x = -2

- $x = -5$
- $-5x + 6y = -2$
- $y = 6$
- $5x + 6y = 2$
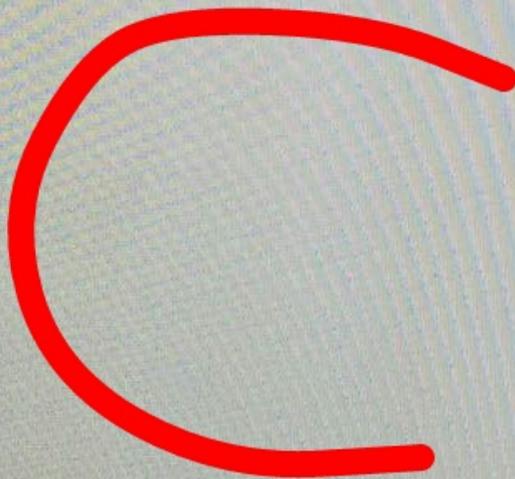
Identify the vertex and the y-intercept of the graph of the function $y = 3(x+2)^2 - 5$

- ○ vertex:(2,5); y-intercept: 12
- ○ vertex: (2,-5); y-intercept: 7
- ○ vertex:(-2,5); y-intercept: -1
- ○ vertex:(-2,-5); y-intercept: 7

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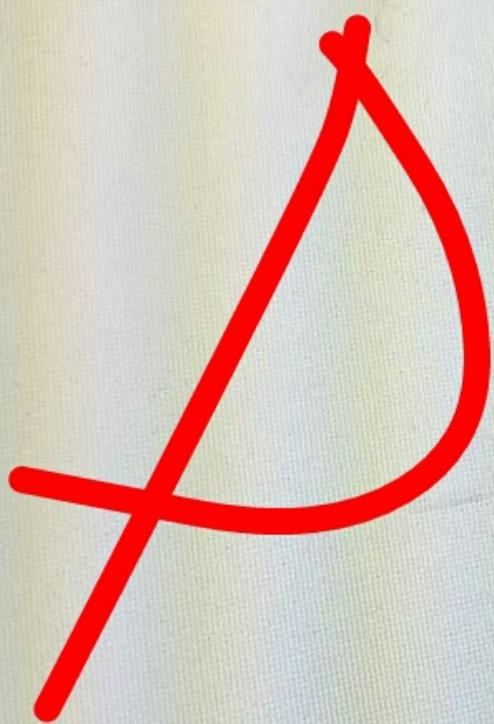
Question No. 5

The Solution set of $-|4x + 2| \geq 6$ is

- $(-\infty, +\infty)$
- $(-2, 1)$
- $\emptyset$
- $(-\infty, -2] \cup [1, \infty)$

Question No. 4

The solution set of the following equation: $|x+1| = -0.5$ is

- {0.5}
- {-2}
- ϕ
- {19}

Determine the solution set of the following inequality

$$-4x + 20 < 0$$

- $S = (-\infty, -5)$
- $S = (5, \infty)$
- $S = (-\infty, 5)$
- $S = (-5, \infty)$

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

- $f^{-1}(x) = (2x + 5)$
- $f^{-1}(x) = \dfrac{1}{3}(2x + 5)$
- $f^{-1}(x) = 3(2x + 5)$
- $f^{-1}(x) = (2x + 5)^3$
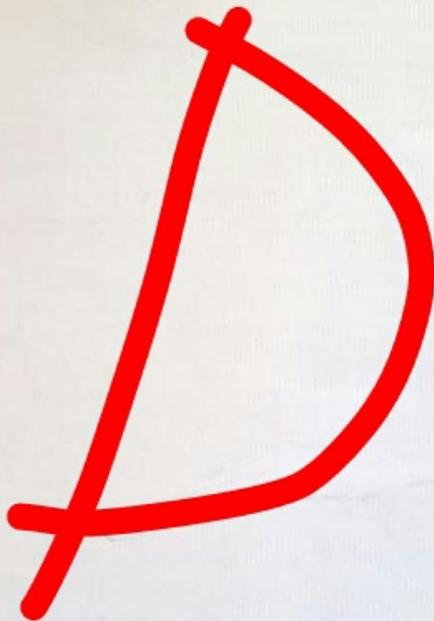
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The inverse of $f(x) = \dfrac{1}{3x+1}$, $x \neq \dfrac{-1}{3}$, is

- $f^{-1}(x) = \dfrac{x+1}{3x}$, $x \neq 0$.

- $f^{-1}(x) = \dfrac{-x+1}{x}$, $x \neq 0$.

- $f^{-1}(x) = \dfrac{-x+1}{3x}$, $x \neq 0$.

- $f^{-1}(x) = \dfrac{-x-1}{3x}$, $x \neq 0$.
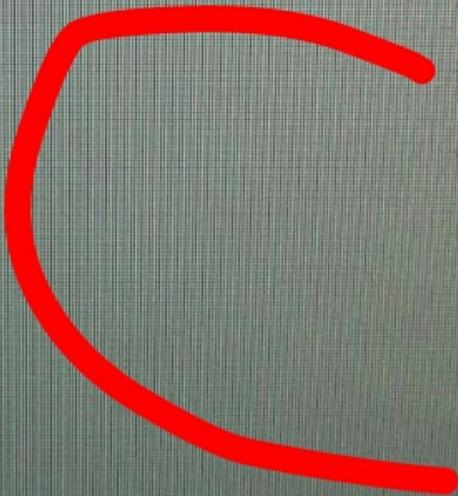
Question No. 9

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

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

Find the slope of the line through the points (-4,8),(2,-3)
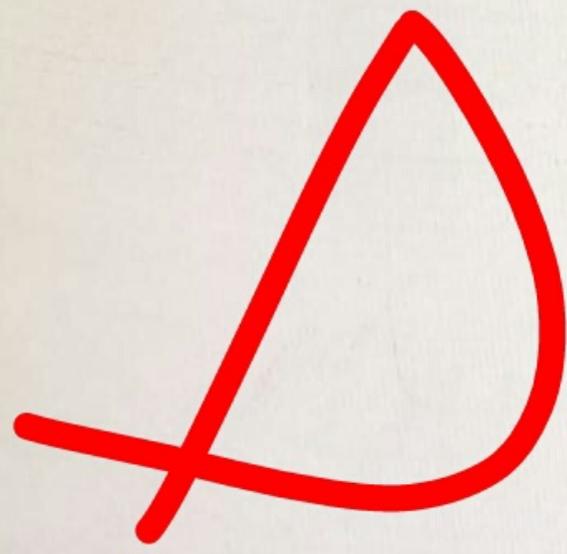
If $f(x) = \sqrt{x+2}$ and $g(x) = 3x - 5$. Find $h(x) = (g \circ f)(x)$.

○ $h(x) = 3\sqrt{x} - 1$

○ $h(x) = 3\sqrt{x+2} - 5$

○ $h(x) = \sqrt{3x-3}$

○ $h(x) = 3\sqrt{x} + 3$

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Question No. 4

The solution set of the following equation: $|16-5x|-2=3$ is

- $\left\{\dfrac{4}{5}, \dfrac{8}{5}\right\}$

- ϕ

- $\{4,7\}$

- $\left\{\dfrac{11}{5}, \dfrac{21}{5}\right\}$
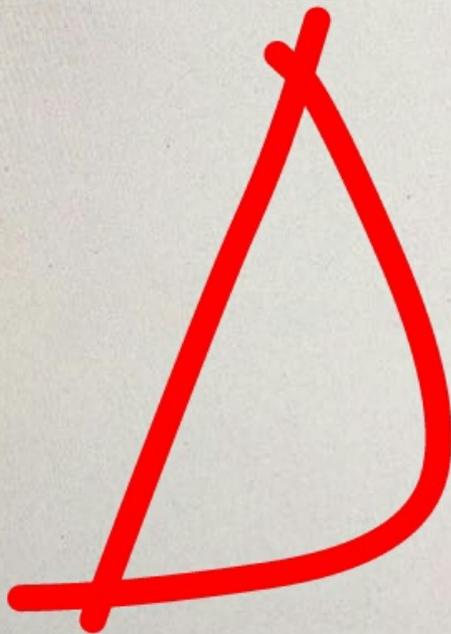
The domain of $f(x) = \sqrt[3]{2x+1}$ is

- $(-\infty, \infty)$
- $(-0.5, \infty)$
- $(-\infty, -3) \cup (-3,1)$
- $[-0.5, \infty)$

Question No. 9

Give the y-intercept of the line -5x+y = - 3

- ○ 3
- ○ -5
- ○ 5
- ○ -3
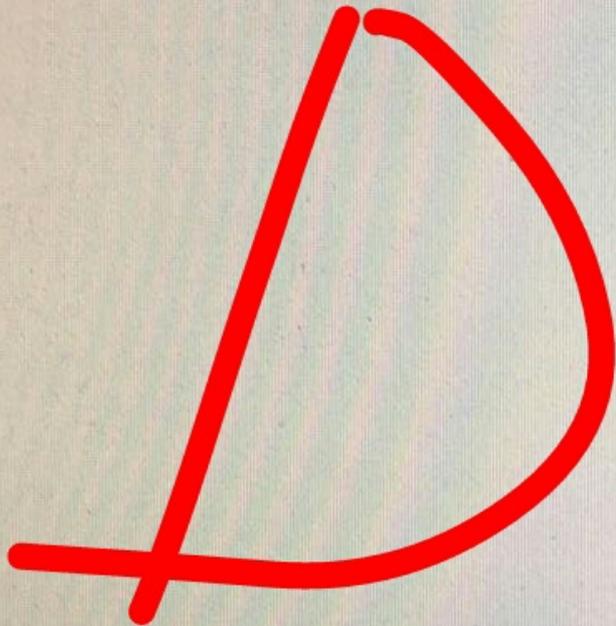
Question No. 10

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

- -3
- 1
- 0
- 3
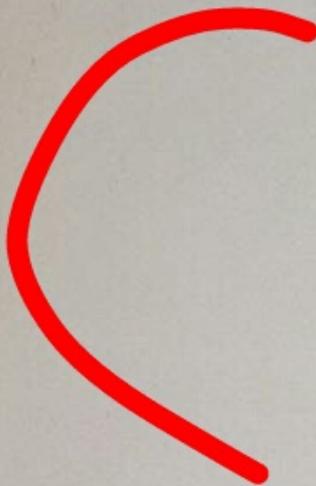
Question No. 3

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

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

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

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

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

A

If $f(x) = -\sqrt{2x}$ then $f(x)$ is

○ decreasing

○ increasing

○ constant

○ not defined

Find $f(x) - g(x)$, if $f(x) = \frac{8x-5}{4}$, $g(x) = \frac{1}{x}$.

○ $\dfrac{8x^2-5x+4}{4x}$

○ $\dfrac{8x-5}{4-x}$

○ $\dfrac{8x^2-5x-1}{4x}$

○ $\dfrac{8x^2-5x-4}{4x}$
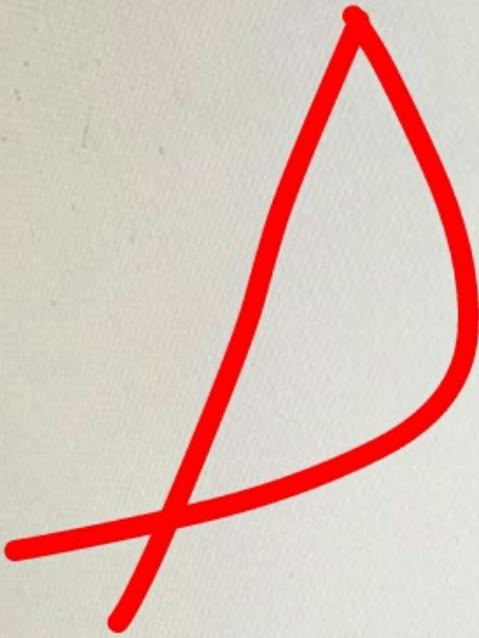
Question No. 2

Determine the solution set of the following inequality

$$4 \le -4 + 2x < 10$$

- ○ s=[4,7)
- ○ s=[4,7]
- ○ s=(4,7)
- ○ s=(4,7]

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Question No. 23

The domain of the inverse of F = { (-5,2), (1,0), (4,12), (-1,3)} is

- D = { -5, 1, 4, -1 }
- D = { 3, 0, 4, 12 }
- D = { 5, 3, 1, 0 }
- D = { 2, 0, 12, 3 }

Question No. 3

Determine the solution set of the following inequality

$$3 + x < \frac{1 - 3x}{2} \le x + 8$$

- (-3,-1]
- [-3,-1)
- [-1,3)
- (-1,3]

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Question No. 10

The slopes of two parallel lines are

- 0
- equal
- different
- undefined

Question No. 22

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

- 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 $f(x)$
- $x + a$ is a factor of the polynomial $f(x)$
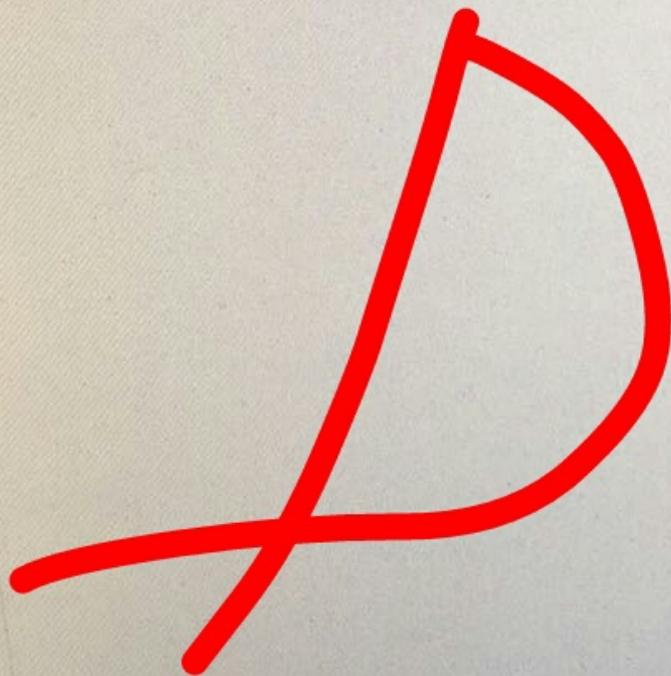
stion No. 24

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

hen $f^{-1}(5) =$

○ $\dfrac{1}{5}$

○ 5

○ $\dfrac{1}{4}$

○ 4
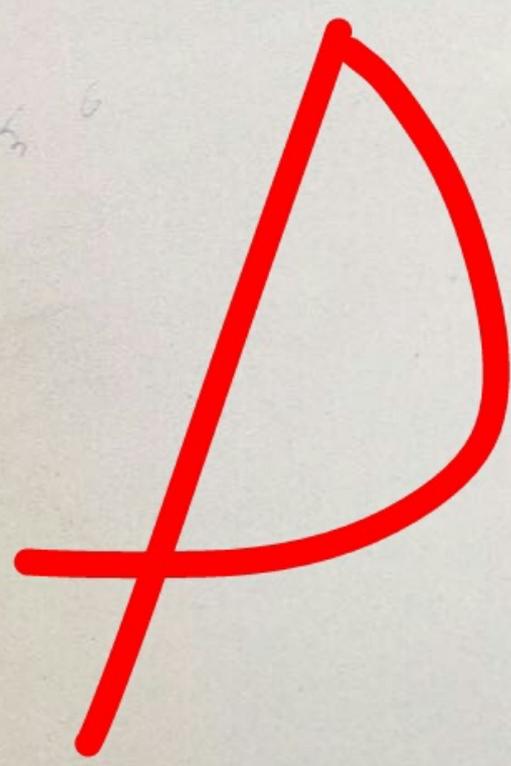
Question No. 23

The inverse of $F = \{ (-3,3), (0,0), (4,2), (1,5) \}$ is

- $G = \{ (3,3), (0,0), (-4,2), (-1,5) \}$
- $G = \{ (-3,-3), (0,0), (4,-2), (1,-5) \}$
- $G = \{ (3,-3), (0,0), (2,4), (5,1) \}$
- $G = \{ (3,3), (0,0), (2,4), (1,5) \}$
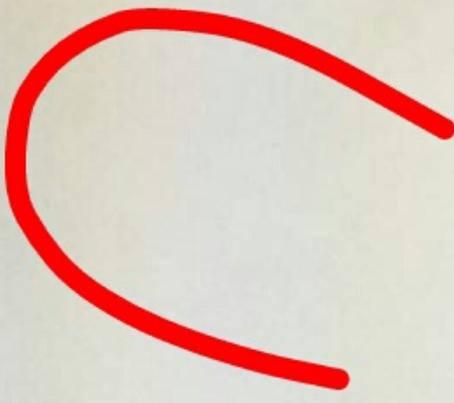
Find the equation of the line parallel to $y = 3x - 1$ that passes through the point $(0, 5)$

- ⦿ $y = 3x + 5$
- ⦿ $y = -3x + 5$
- ⦿ $y = -3x - 5$
- ⦿ $y = 3x - 5$

Question No. 16

The function $f(x) = x^2 + 6x + 8$ is equivalent to

○ $f(x) = (x+3)^2 - 1$

○ $f(x) = (x-3)^2 - 1$

○ $f(x) = (x-3)^2 + 1$

○ $f(x) = (x+3)^2 + 1$

The solution set of the following equation: $2 - |10x - \sqrt{2}| = 3$ is

- $\left\{\frac{2}{5}\right\}$
- $\{\phi\}$
- $\frac{4}{5}$
- ϕ
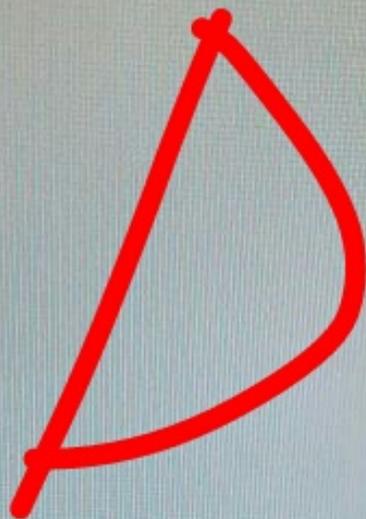
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INSTRUCTION: تعليمات Please choose the BEST answer from the given options for each

Question:
Find the equation of the line with slope -2 and y-intercept -4.

Options:

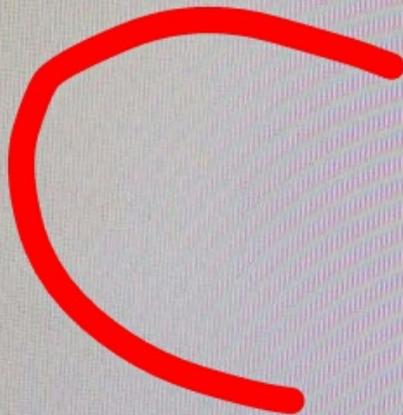- $y = -4x - 2$
- $-4x - 2y = 0$
- $-2y = -4$
- $y = -2x - 4$

Question:

which of the following functions is not one to one

Options:

○ F= { (4,-3), (1,0), (5,-2), (1,3) }
○ F= { (3,5), (6,0), (7,-2), (1,-5) }
○ F= { (6,-3), (0,5), (4,-2), (1,-3) }
○ F= { (-3,-2), (0,4), (3,2), (1,-5) }
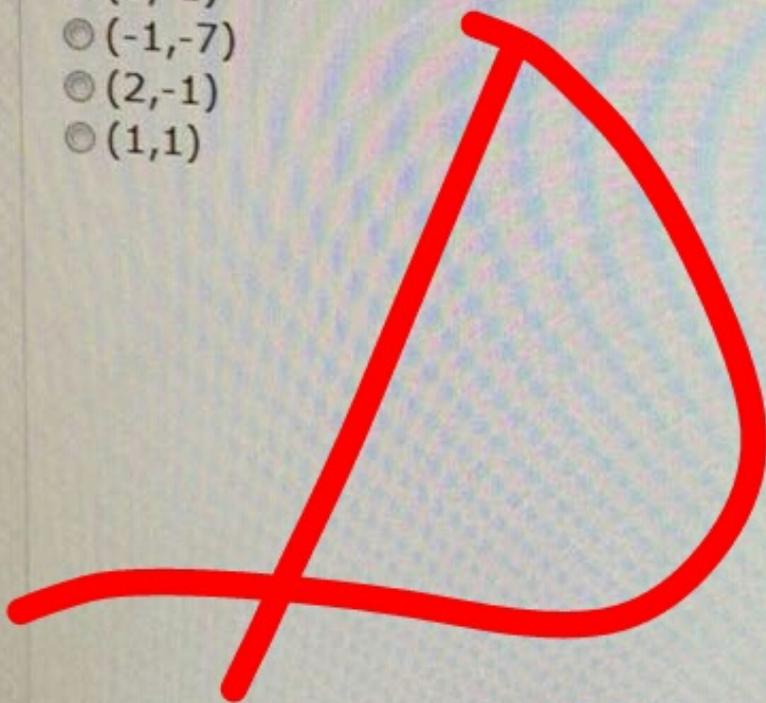
تسليم الإجابة
Submit Answer

INSTRUCTION: تعليمات Please choose the BEST answer from the given options for

Question:

The vertex of the graph of $f(x) = -2x^2 + 4x - 1$ is

Options:

- (0,-1)
- (-1,-7)
- (2,-1)
- (1,1)

تسليم الإجابة
Submit Answer

Question:

The function $f(x) = 3x + 2x^4 - x^2 + 1$ is

Options:

- ○ Quadratic
- ○ Quartic
- ○ Linear
- ○ Cubic

Solve $|x| - 7 = -5$

○ {12}

○ {2}

○ No Solution

○ {2,-2}

The Solution set of $-2|x-7| \leq -28$ is

- $(-\infty, -7] \cup [21, \infty)$
- $\emptyset$
- $-7 \leq x \leq 21$
- $(-\infty, \infty)$

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Question:

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

Options:

- $x \in (-3, 4)$

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

- $x \in [4, \infty)$

- $x \in [-3, 4]$

Question:

The coefficients of the quadratic equation $10 = -9x^2$ are

Options:

- $a = 9, b = 0, c = 10$
- $a = 0, b = 10, c = -9$
- $a = 9, b = -10, c = 0$
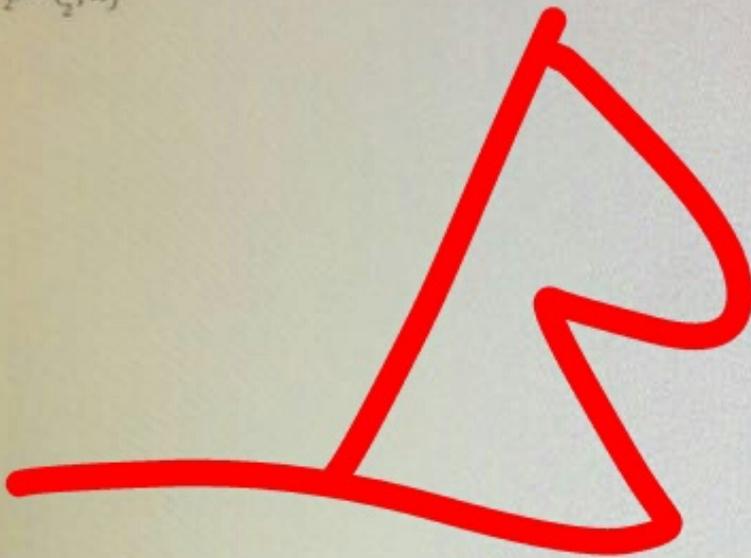- $a = 9, b = 10, c = 0$

Solve $6n - 4 \geq 2n + 16$

- $[5, \infty)$
- $(5, \infty)$
- $[8, \infty)$
- $(3, \infty)$

Question No. 7

The Solution set of $\frac{1}{2}|2x+3|-1>1$ is

- $(-\infty, \infty)$
- $(-\infty, -\frac{7}{2}) \cup (\frac{1}{2}, \infty)$
- $(-\infty, \frac{1}{2}) \cup (\frac{7}{2}, \infty)$
- $\emptyset$

Question:

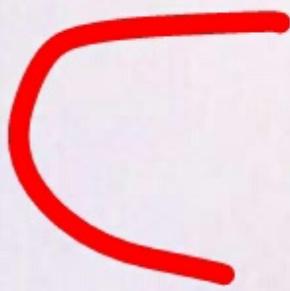Solve the inequality $|12 + 3x| > -21$

Options:

- $(-\infty, -11) \cup (3, \infty)$

- $(3, \infty)$

- $(-\infty, \infty)$

- $(-11, 3)$

Question No. 6

Solve $-10|x+3| + 7 = -103$

- ○ {8,-14}
- ○ {7,-14}
- ○ {6,14}
- ○ {8,-12}

A

Question No. 26

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

- $f(x) = -2x + 5$
- $f(x) = x$
- $f(x) = \sqrt{81 - x^2}$
- $f(x) = 8 + 16x$

The Solution set of $|2x| - 18 > -12$ is

- ⊘
- $(-\infty, \infty)$
- $(-\infty, -3) \cup (3, \infty)$
- $(-3, 3)$

Question No. 26

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

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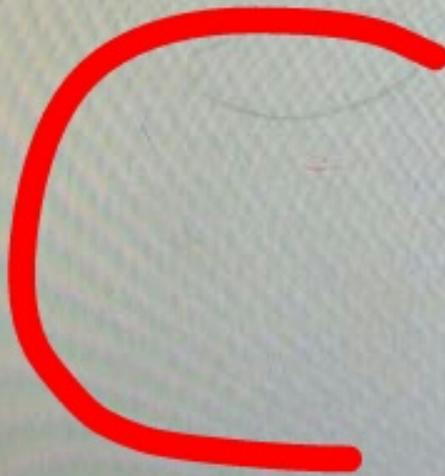- $[-3, 1)$
- $[-\dfrac{1}{3}, 1)$
- all real numbers

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Question No. 16

The slope of the vertical line is

- ○ -1
- ○ 0
- ○ Undefined
- ● 1

Question No. 12

If $a \geq b$ and c is a real number
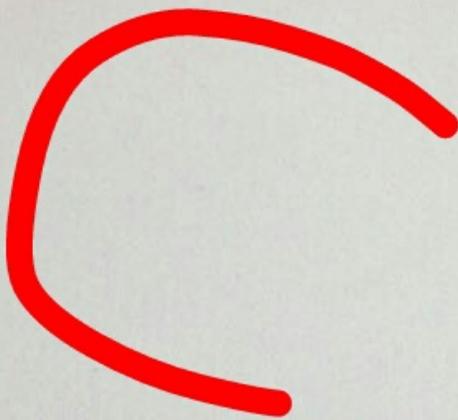
- $a + c > b + c$
- $a + c \geq b + c$
- $a + c < b + c$
- $a + c \leq b + c$

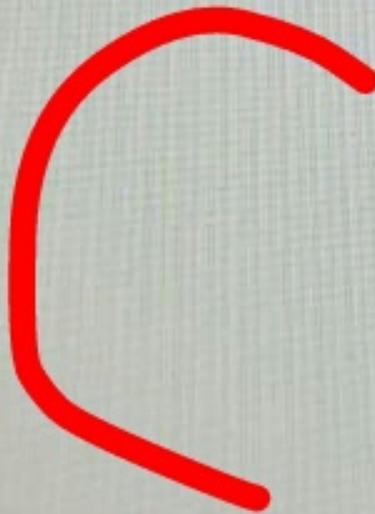Find the domain and the range of the function $f(x) = (x+8)^2 - 7$

- Domain: $(-\infty, \infty)$; range: $(-8, \infty)$
- Domain: $(-8, \infty)$; range: $(-\infty, \infty)$
- Domain: $(-\infty, \infty)$; range: $[-7, \infty)$
- Domain: $(-7, \infty)$; range: $(-\infty, \infty)$

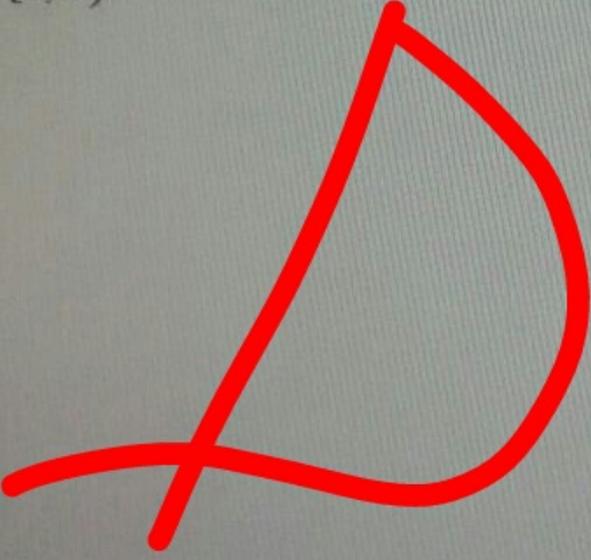Question No. 20

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

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

Question No. 14

The domain of $f(x) = \sqrt{4x}$ is

- $(0, \infty)$
- $R \setminus \{4\}$
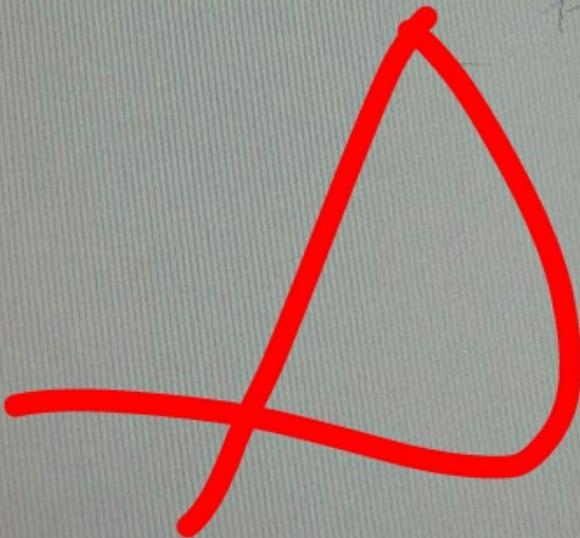- $(-\infty, \infty)$
- $[0, \infty)$

Question No. 12

Solve this quadratic inequality

$$x^2 + 5x - 24 \leq 0$$

- $(-\infty, -3) \cup (8, \infty)$
- $(-\infty, -8) \cup (3, \infty)$
- $(-3, 8)$
- $[-8, 3]$

Question No. 13

Rewrite this absolute value inequality as a compound inequality
$$|11 + 4x| < 23$$

- ○ $-23 > 11 + 4x < 23$
- ○ $-23 > 11 + 4x > 23$
- ○ $-23 < 11 + 4x > 23$
- ◉ $-23 < 11 + 4x < 23$

Question No. 24

If x+1 is a factor of the polynomial f(x) then

- $f(0) = 1$
- $f(-1) = 0$
- $f(1) = 0$
- $f(0) = -1$

Question No. 21

The interval where the graph of $f(x) = x^2 + 2x - 3$ decreases is

- [-1,∞)
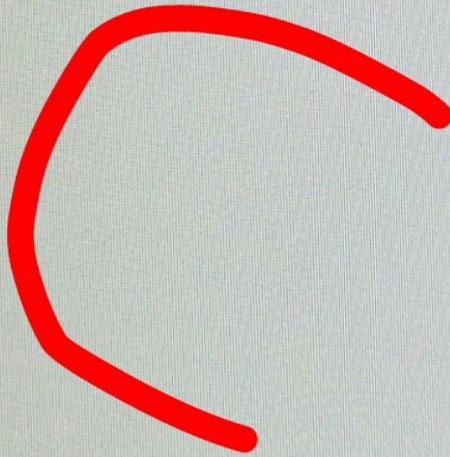- (-∞,∞)
- (-∞,-1]
- [-3,∞)

Let $f(x)$ be a one-to-one function, then $g(x)$ is the inverse function of $f(x)$ if

○ $(fog)(x) = x$ only

○ $(fog)(x) \neq x$ and $(gof)(x) \neq x$

○ $(fog)(x) = x$ and $(gof)(x) = x$

○ $(fog)(x) \neq x$ only

Question No. 22

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

- 3
- 2
- 4
- 5

Question No. 18

Find $f(x) - g(x)$, where $f(x) = 4x - 9$, $g(x) = 7x - 3$

- ○ 3x + 6
- ○ -3x - 6
- ○ 11x - 12
- ○ -3x - 12

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Question No. 25

A function is one-to-one if

- ✓ every horizontal line intersects the graph at most once
- every vertical line intersects the graph twice
- every vertical line intersects the graph at most once
- every horizontal line intersects the graph twice

Question No. 15

Simplify $\dfrac{(a+1)^{-1}-(a-1)^{-1}}{(a^2-1)^{-1}}$

- ○ 2a
- ○ 2
- ✓ -2
- ○ -2a

$$= \dfrac{\dfrac{1}{a+1} - \dfrac{1}{a-1}}{\dfrac{1}{a^2-1}}$$

$$= \dfrac{\dfrac{(a-1)-(a+1)}{a^2-1}}{\dfrac{1}{a^2-1}} = -2$$

The solution of the exponential equation $\left(\dfrac{3}{2}\right)^{2x+1} = \dfrac{4}{9}$ is

- ✓ $x = \dfrac{-3}{2}$
- ○ $x = \dfrac{4}{9}$
- ○ $x = \dfrac{1}{2}$
- ○ $x = \dfrac{3}{2}$

$$\left(\dfrac{3}{2}\right)^{2x+1} = \left(\dfrac{3}{2}\right)^{-2}$$

$$2x + 1 = -2$$

$$2x = -2 - 1$$

$$2x = -3$$

$$x = \dfrac{-3}{2}$$

INSTRUCTION: تعليمات Please choose the BEST answer from the given options for each question.

Question:
If (x+1) is a factor of the polynomial f(x) then

Options:

✓ ⦿ f(-1) = 0
  ◯ f(0) = -1
  ◯ f(1) = 0
  ◯ f(0) = 1

بما ستنا م نظرية لعوامل هو م

$$f(K) = 0$$

$$K = -1$$

The graph of $f(x) = -\left(\frac{1}{2}\right)^x$ is

- ⓘ Constant
- ⓘ Decreasing
- ✓ Increasing
- ⓘ Decreasing and increasing

Question No. 30

The solution of the exponential equation $\left(\frac{1}{2}\right)^{2x} = 64$ is

- $x = \frac{1}{3}$
- $x = 3$
- $x = \frac{-1}{3}$
- ✔ $x = -3$

$$2^{-2x} = 2^6$$

$$-2x = 6$$

$$x = \frac{-6}{2}$$

$$x = -3$$

Question No. 26

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

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

ممكلوس الدالة ٓ
الحكطيه هود الة
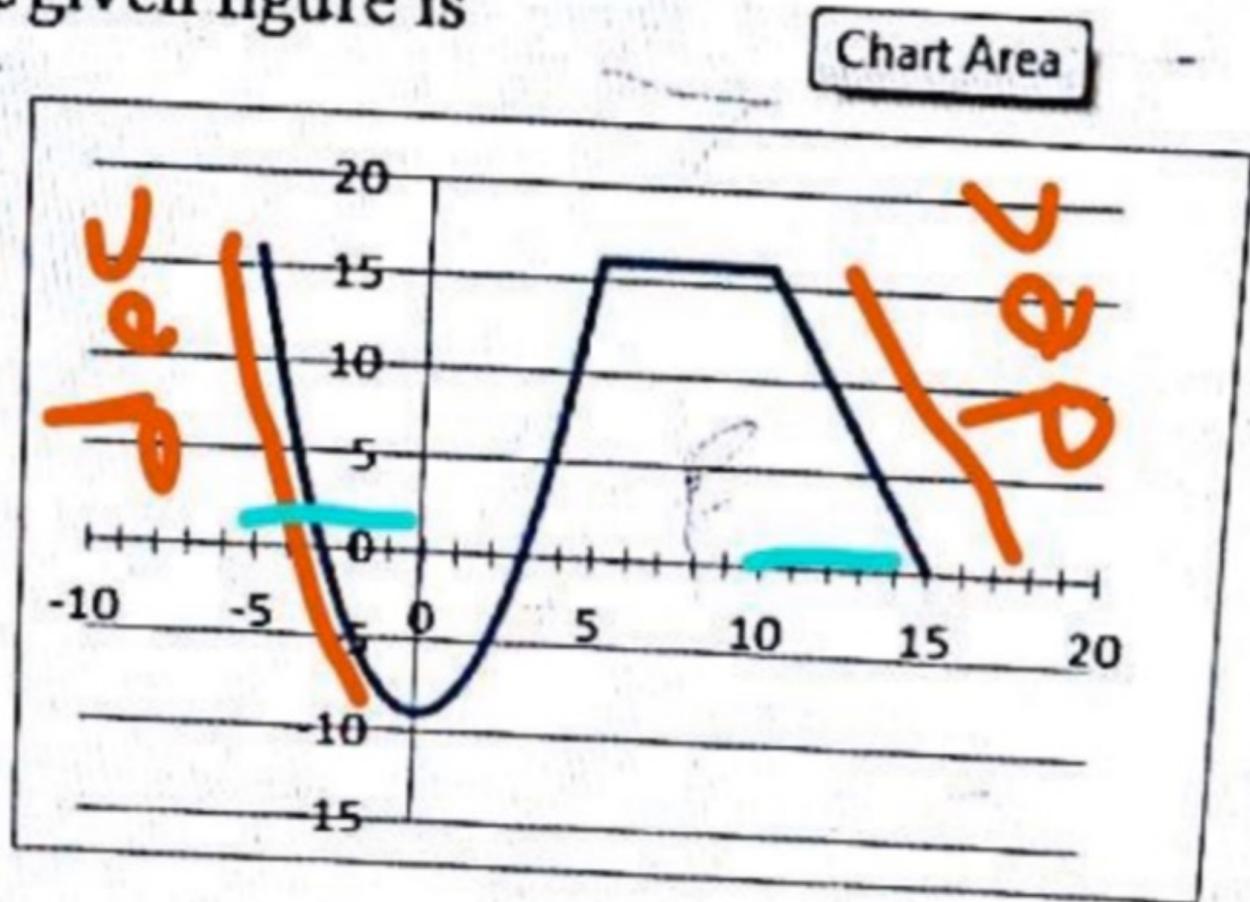حططه ، مجال الدالة ٓ
١ حططه
IR

Question No. 21

If $f(x)$ is a polynomial such that the remainder of the division $f(x) \div (x-2)$ equals -5 then

○ $f(-5) = 2$

○ $f(-2) = -5$

○ $f(-5) = -2$

— $f(2) = -5$

من نظرية البواقي
$f(K) = r$
$K = 2$, $r = -5$

Question No. 15

The function in the given figure is

Chart Area

○ increasing on the interval $[0, 10]$

○ constant on the interval $[5, 15]$

✓ decreasing on $[-5, 0] \cup [10, 15]$

○ decreasing on the interval $[-9, 16]$

Question No. 29

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

- ○ $x = -2$
- ○ $y = 3$
- ○ $y = -3$
- ○ $x = 2$

$y = ر کمد$

Question No. 23

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

○ $f(-2) = 0$
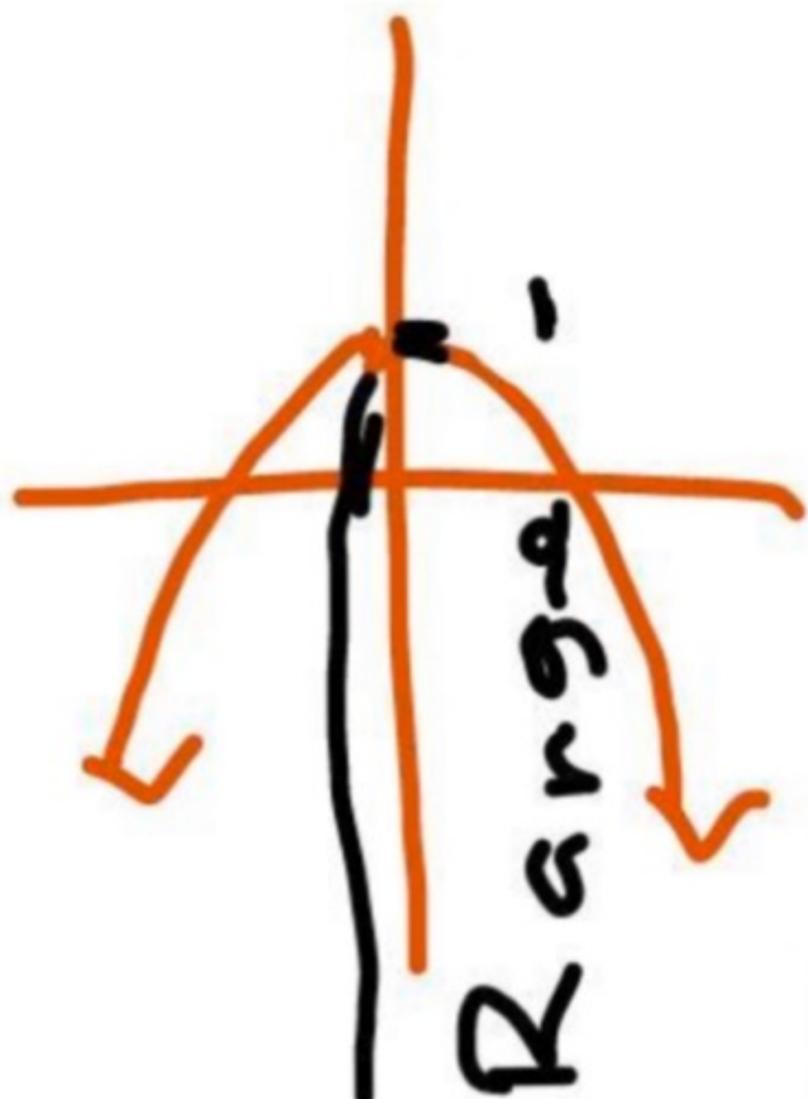
✓ $f(2) = 0$

○ $f(0) = 2$

○ $f(0) = -2$

$$f(k) = 0$$

$$k = 2$$

The range of the function $f(x) = -x^2 + 1$ is

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

$$[-\infty, 1]$$

Range

The range of the function $f(x) = 1 + 2^{5x}$ is

- ○ $(0, \infty)$
- ✓ $(1, \infty)$
- ○ $(2, \infty)$
- ○ $(-\infty, \infty)$

Question No. 13

Which of the following is a horizontal line:

- $y = -\frac{1}{2}$
- $x = -13$
- $3y - 11x = 0$
- $5y - \frac{1}{2}x + 1 = 0$

$y = $ عدد

Let $f(x)$ be a one-to-one function, then $g(x)$ is the inverse function of $f(x)$ if

○ $(fog)(x) = x$ only

○ $(fog)(x) \neq x$ and $(gof)(x) \neq x$

✓ $(fog)(x) = x$ and $(gof)(x) = x$

○ $(fog)(x) \neq x$ only

Question No. 15

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

- $(f-g)(x) = -\dfrac{1}{x-7}$
- $(f-g)(x) = \dfrac{-x+7}{(x-2)(x+5)}$
- $(f-g)(x) = \dfrac{-x+3}{(x-2)(x+5)}$
- $(f-g)(x) = \dfrac{-x+23}{(x-2)(x+5)}$

$$\frac{3}{x-2} - \frac{4}{x+5}$$

$$= \frac{3(x+5) - 4(x-2)}{(x-2)(x+5)}$$

$$= \frac{3x+15 - 4x+8}{(x-2)(x+5)}$$

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

○ $f(x) = 2x^2 - 12x + 6$

○ $f(x) = 2x^2 - 12x - 21$

✓ $f(x) = 2x^2 - 12x + 15$

○ $f(x) = 2x^2 - 6x + 15$

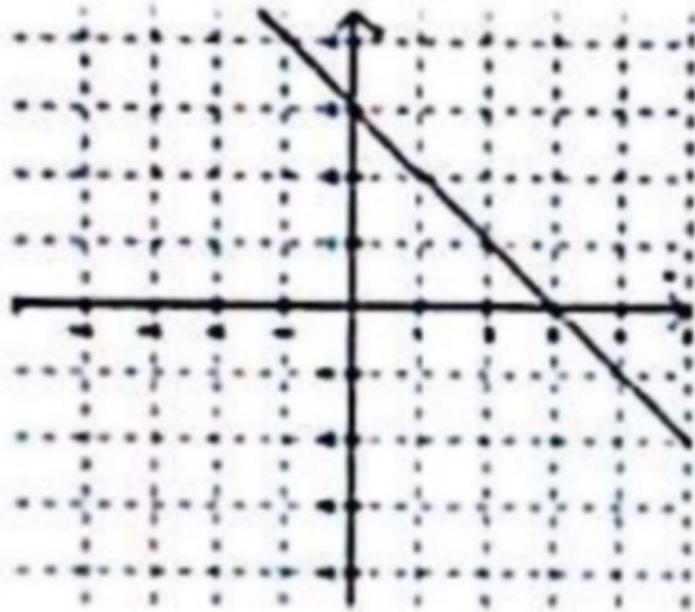$$f(x) = 2(x^2 - 6x + 9) - 3$$
$$= 2x^2 - 12x + 18 - 3$$
$$= 2x^2 - 12x + 15$$

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

- ✓ $(-\infty, 0)$
- $(0, \infty)$
- $(-2, \infty)$
- $(2, \infty)$

Which graph has a positive slope?
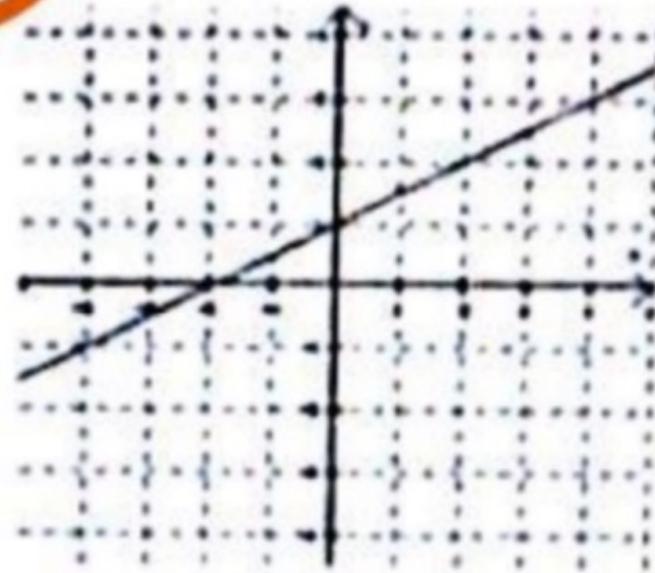
I

II

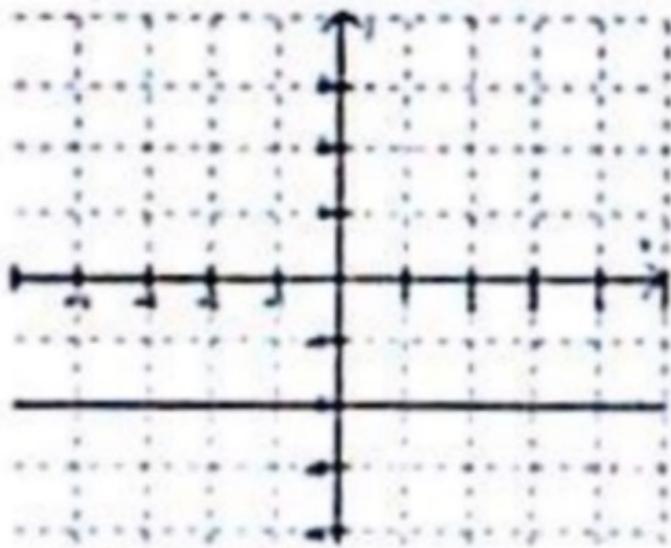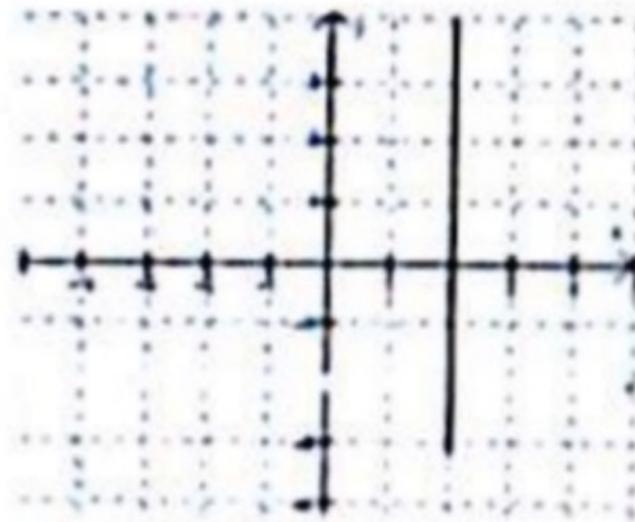III

IV

- ○ IV
- ○ I
- ○ III
- ✓ II

Which of the following represent $x \leq -5$ or $x > 1$

○

$$\longleftarrow \overset{)}{} \overset{|}{} \longrightarrow$$

 −5 1

✓

$$\longleftarrow \overset{|}{} \overset{(}{} \longrightarrow$$
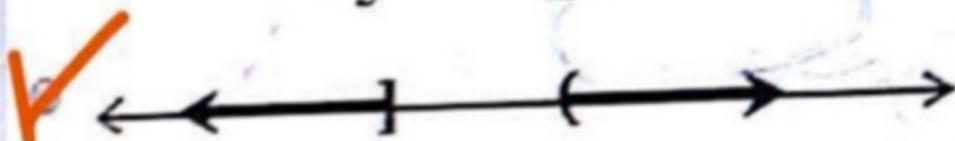
 −5 1

●

$$\longleftarrow \overset{[}{} \overset{)}{} \longrightarrow$$

 −5 1

○

$$\longleftarrow \overset{(}{} \overset{|}{} \longrightarrow$$

 −5 1
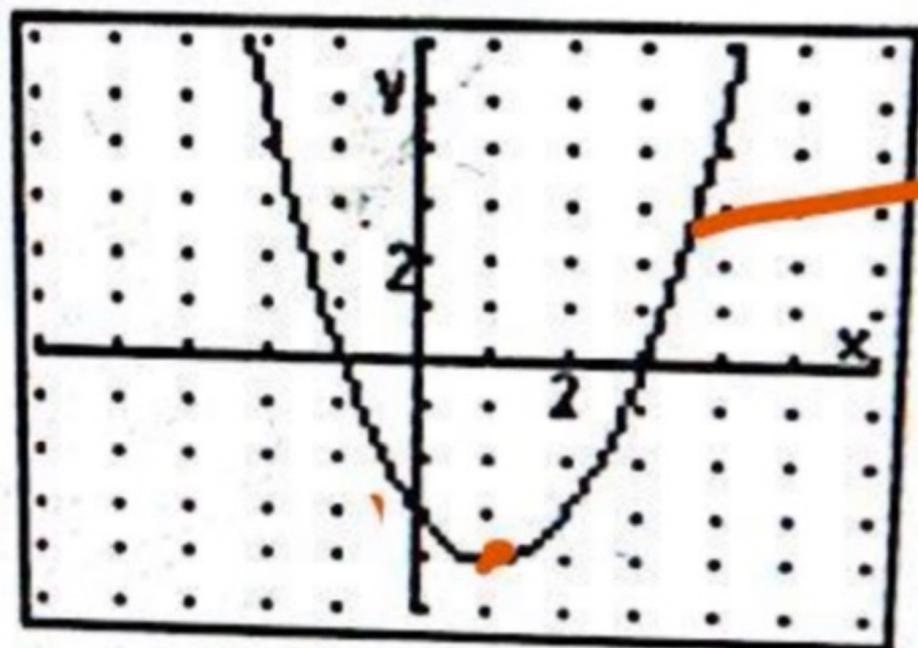
Question No. 19

Which is the equation for this graph?

○ $y = x^2 - 2x - 3$

○ $y = -x^2 - 2x - 4$

○ $y = -x^2 + 2x + 4$

○ $y = -x^2 - 4$

$\left. \begin{array}{c} \\ \\ \\ \end{array} \right\} a < 0$

لأن فتحة القطع
لأعلى a > 0

Question No. 17

Find the axis of symmetry of $y = 2(x - 5)^2 + 3$

○ y = 3

○ x = 3

○ y = -3

✓ x = 5

$$x = h$$

$$y = a(x - h)^2 + k$$

Question No. 22

If 'a' is a real number then the remainder of the division
$(x^3 + ax^2 + x + 3) \div (x - 1)$ is:

- ✔ a + 5
- a + 4
- a + 2
- a + 3

$$\underline{1|} \quad 1 \qquad a \qquad 1 \qquad 3$$

$$1 \qquad 1+a \qquad 2+a$$

$$\overline{1 \quad 1+a \quad 2+a \,\big|\, 5+a}$$

Remainder

The domain of $f(x) = \sqrt{4x}$ is

○ $(0, \infty)$

○ $R \setminus \{4\}$

○ $(-\infty, \infty)$

✓ $[0, \infty)$

$4x \geq 0$

$x \geq 0$

$[0, \infty)$

The roots of $(m + 5)(m + 6) = $ ⬚ are

- ○ $m = 8, m = 3$
- ✓ $m = -8, m = -3$
- ○ $m = 1, m = 0$
- ○ $m = -5, m = -6$

$$m^2 + 5m + 6m + 30 = 6$$

$$m^2 + 11m + 24 = 0$$

$$(m + 8)(m + 3) = 0$$

$$m = -8 \quad , \quad m = -3$$

Solve this quadratic inequality $x^2 - 81 \geq 0$

✓ $(-\infty, -9] \cup [9, \infty)$

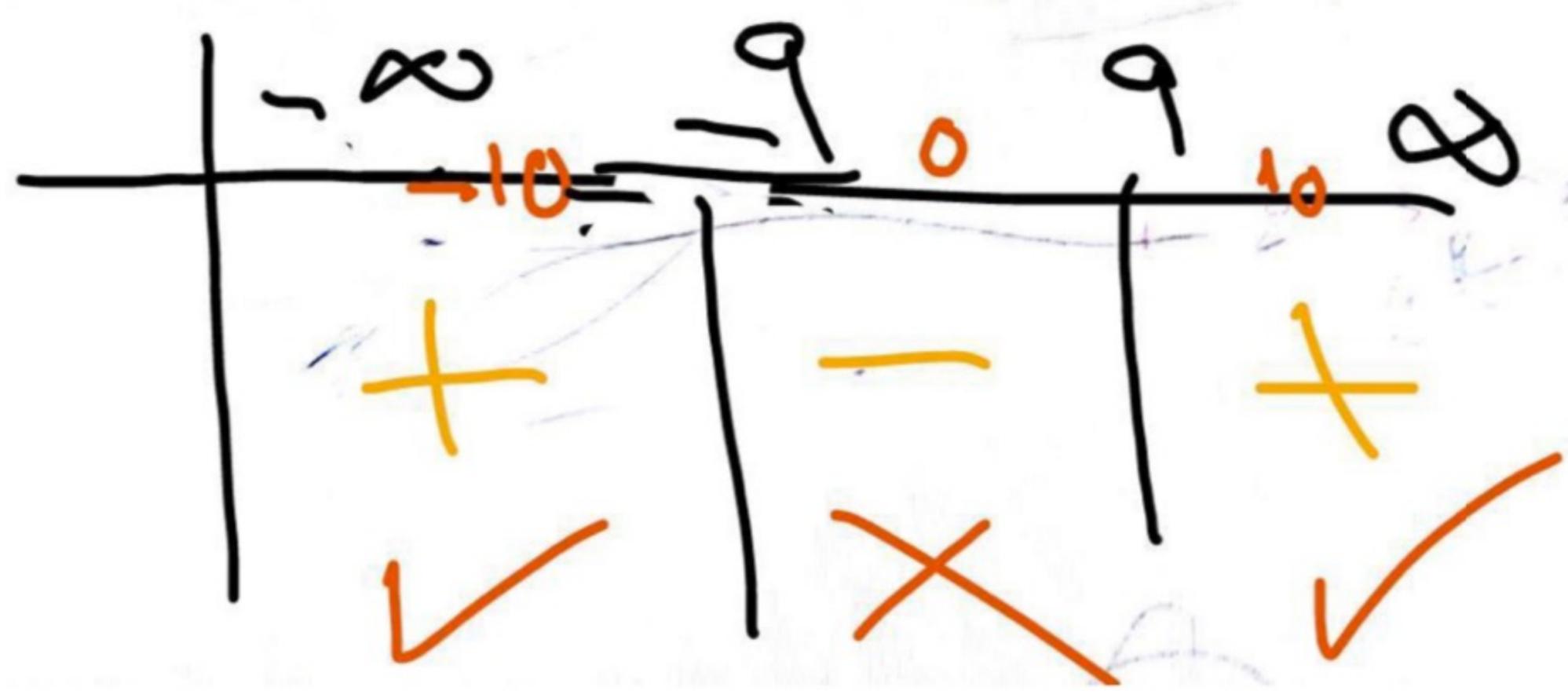○ $-9 \leq x \leq 9$

○ $-9 \leq x \geq 9$

○ $[9, \infty)$

$x^2 = 81$

$x = \pm 9$

تابع محدب

The interval where the graph of $f(x) = x^2 + 2x - 3$ decreases is

- ○ $[-1, \infty)$
- ◉ $(-\infty, \infty)$
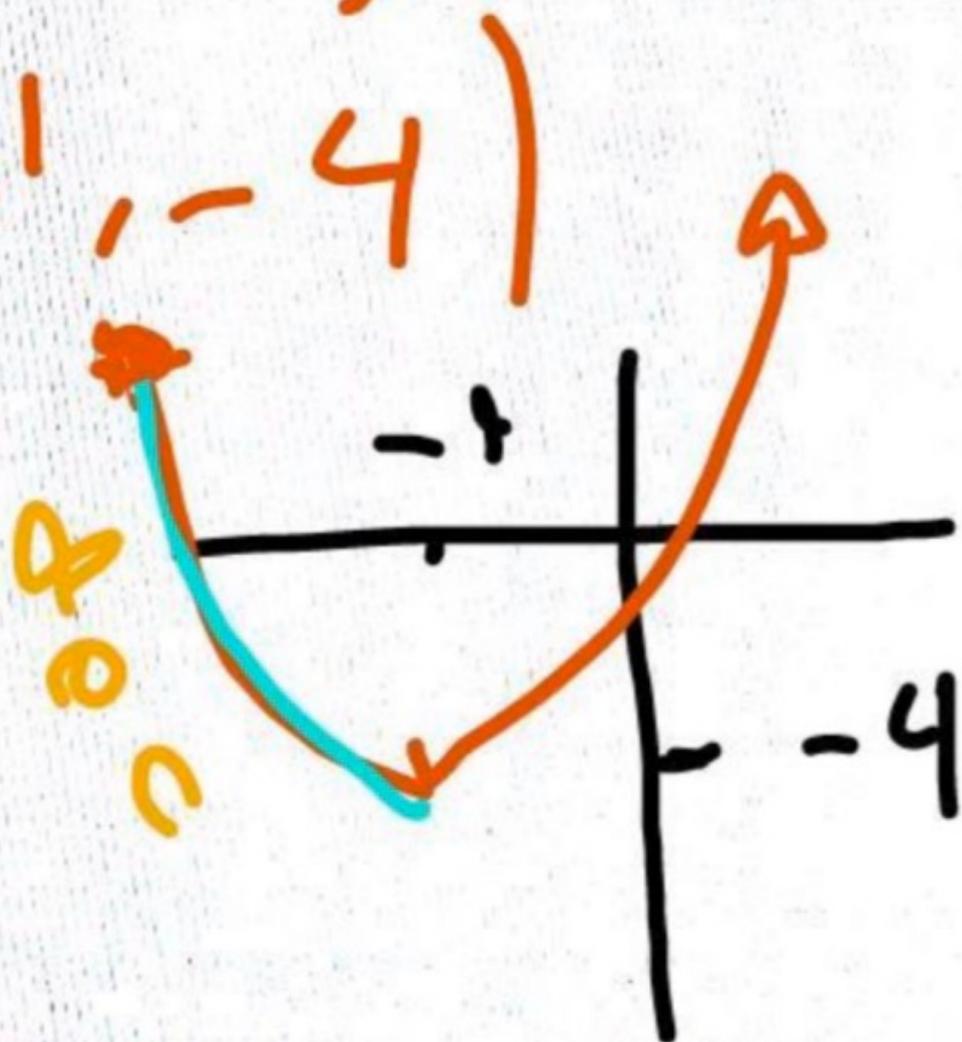- ○ $(-\infty, -1]$
- ○ $[-3, \infty)$

Vertex (h, k)

$$h = \frac{-b}{2a} = \frac{-2}{2} = -1$$

$$k = f(-1) = -4$$

$$(-1, -4)$$

$$(-\infty, -1]$$

Question No. 12

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

- ⭕ -7
- ⭕ -2
- ⭕ 7
- ✓ 2

$$4y = 8x - 28$$

$$y = \frac{8}{4}x - \frac{28}{4}$$

$$= 2x - 7$$

& slope

Question:

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

Options:

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

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

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

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

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

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

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

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

Find $\frac{f(x)}{g(x)}$ and its domain , where $f(x) = 3x - 6$, $g(x) = x - 2$

○ 1; all real numbers

◐ 3; all real numbers

✓ 3; all real numbers except x = 2

○ -3; all real numbers except x = 3

$$\frac{3x-6}{x-2} = \frac{3(x-2)}{x-2}$$

$$= 3$$

Domain: $x - 2 \neq 0$

$$x \neq 2$$

The inverse of $f(x) = (5x-1)^3$ is

✓ $f^{-1}(x) = \frac{1}{5}(\sqrt[3]{x} + 1)$

$f^{-1}(x) = 5(\sqrt[3]{2x} - 1)$

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

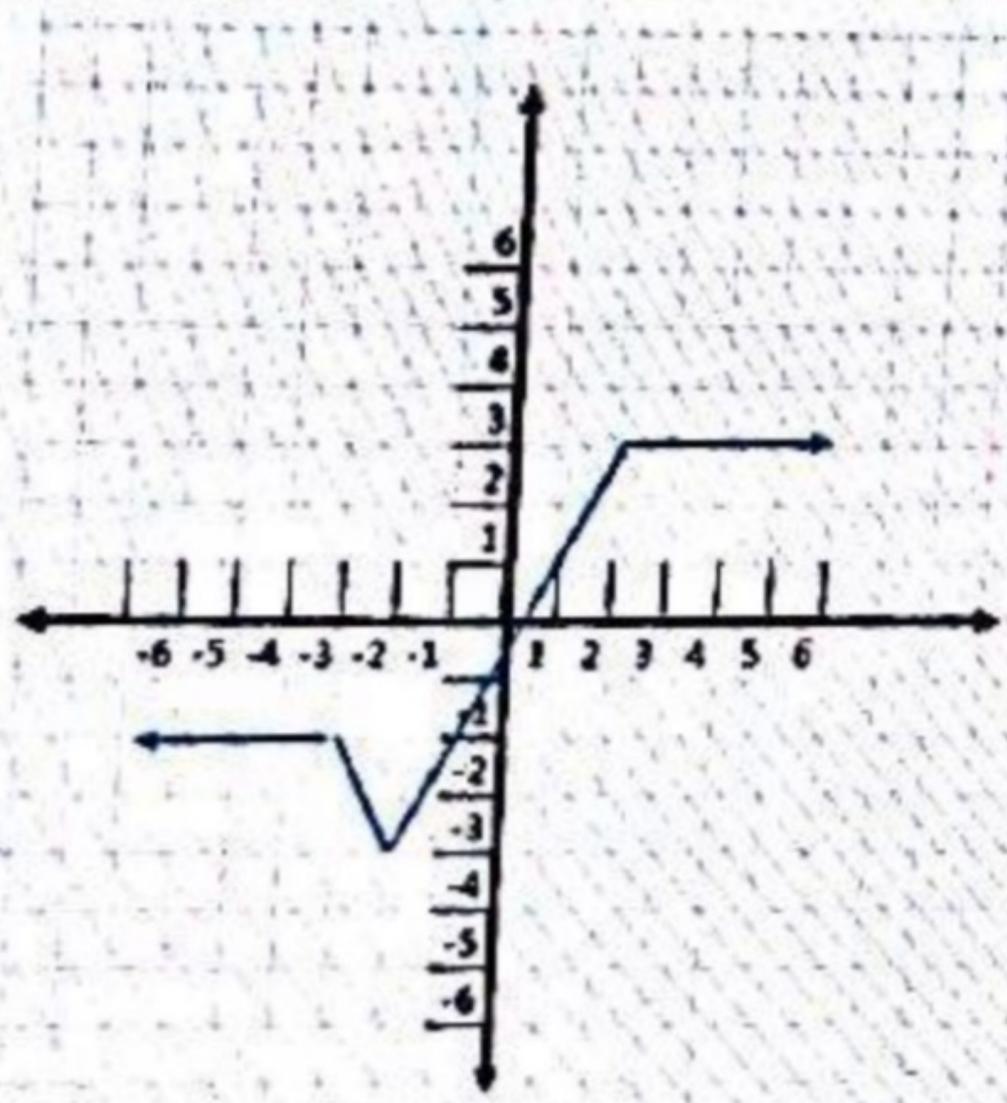$f^{-1}(x) = \frac{1}{5}(\sqrt[3]{x} - 1)$

$$y = (5x-1)^3$$

$$x = (5y-1)^3$$

$$\sqrt[3]{x} = 5y - 1$$

$$5y = \sqrt[3]{x} + 1$$

$$y = \frac{1}{5}\left(\sqrt[3]{x} + 1\right)$$

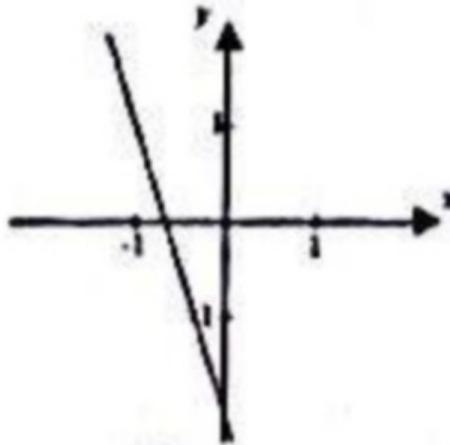Identify the intervals where this function is increasing.

○ $(-2, \infty)$

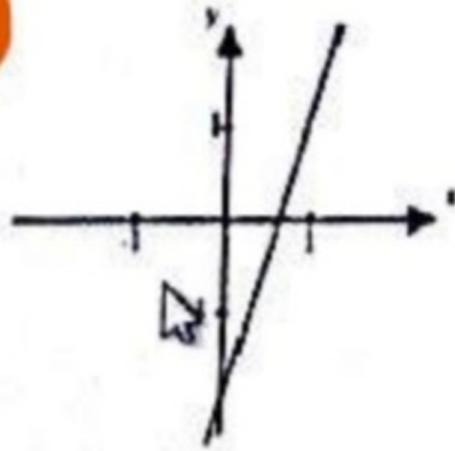○ $(-3, \infty)$

○ $(-3, -2)$

✓ $(-2, 2)$

Question No. 17

+ ve

The slope of a linear function is 3 and its y-intercepts is −2. Which graph represents this function?
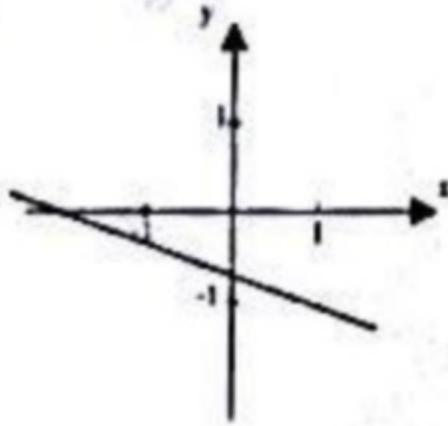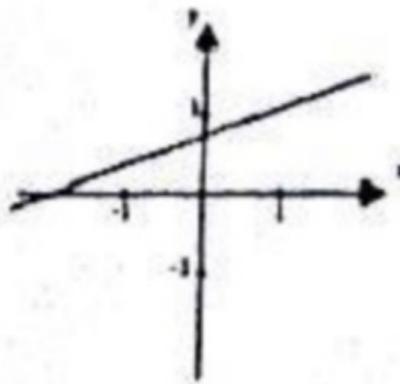
I

II

III

IV

- ✔ II
- ○ III
- ○ IV
- ○ I

Save & Next حفظ والقلى

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

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

$$f(x) = a(x-h)^2 + k$$

$$= a(x+4)^2 - 4$$

$$f(-3) = a(-3+4)^2 - 4$$

$$-5 = a - 4 \implies a = -1$$

$$f(x) = -x^2 - 8x - 16 - 4$$

The range of the function $f(x) = 5^{4x}$ is

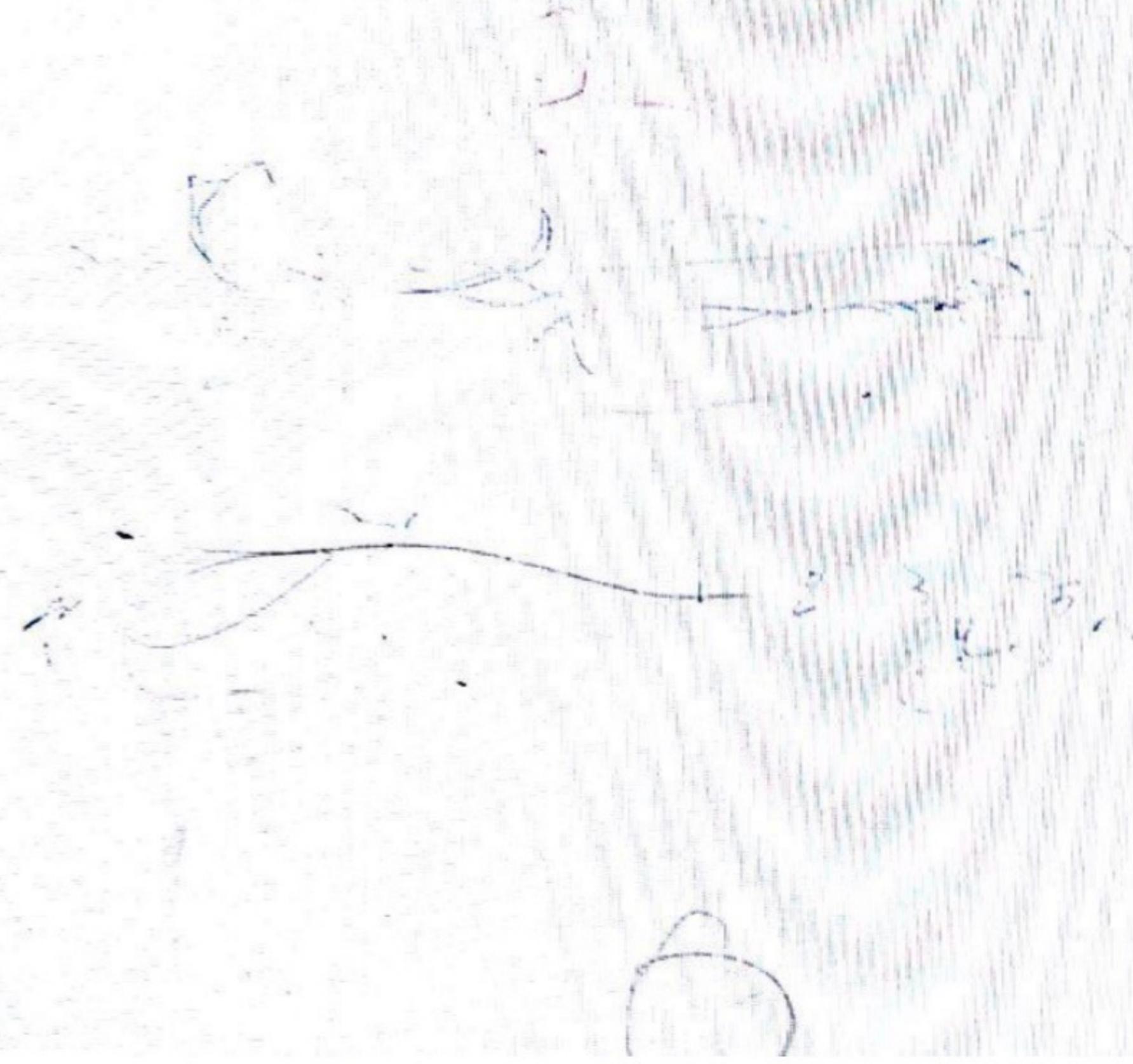- $(5, \infty)$
- ✓ $(0, \infty)$
- $(-\infty, \infty)$
- $[4, \infty)$

Question No. 9

If f(x) = 3x then f(x) is

- ○ Not defined
- ✓ Increasing
- ○ Constant
- ○ Decreasing

Question No. 16

The slope of the line x= -3 is

- ○ -1
- ● Undefined
- ○ 1
- ○ 0

vertical

Line

لخط الرأسي

ميله

غير معرف

Question:

Find the equation of the line with slope $m = \frac{2}{5}$ and passes through the point $P_1 = (2, -4)$.

Options:

✔ $y + 4 = \frac{2}{5}(x - 2)$

○ $y + 4 = \frac{2}{5}(x + 2)$

○ $y - 4 = \frac{2}{5}(x + 2)$

○ $y - 4 = \frac{2}{5}(x - 2)$

$$y - y_1 = m(x - x_1)$$

$$y - (-4) = \frac{2}{5}(x - 2)$$

$$y + 4 = \frac{2}{5}(x - 2)$$

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

Question No. 8

The solution set of the equation $\frac{1}{15}(2x + 5) = \frac{x+2}{9}$ is

- ○ {7}
- ○ {5}
- ✓ {-5}
- ○ {-7}

$$9(2x+5) = 15(x+2)$$

$$18x + 45 = 15x + 30$$

$$18x - 15x = 30 - 45$$

$$3x = -15$$

$$x = \frac{-15}{3} = -5$$

Save & Next

Solve $|x| - 7 = -5$

- ○ {12}
- ○ {2}
- ○ No Solution
- ✓ {2,-2}

$$|x| = -5 + 7$$

$$|x| = 2$$

$$x = 2 \text{ or}$$

$$x = -2$$

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

✓ $\left(\frac{f}{g}\right)(x) = \frac{3x+15}{4x-8}$

○ $\left(\frac{f}{g}\right)(x) = \frac{4x-2}{3x+5}$

○ $\left(\frac{f}{g}\right)(x) = \frac{3}{4(x-2)(x+5)}$

○ $\left(\frac{f}{g}\right)(x) = \frac{3x+5}{4x-2}$

$$= \frac{3}{x-2} \div \frac{4}{x+5}$$

$$= \frac{3}{x-2} \times \frac{x+5}{4}$$

$$= \frac{3(x+5)}{4(x-2)}$$

$$= \frac{3x+15}{4x-8}$$

If $f(x) = \frac{1}{x}$ and $g(x) = x + 2$, what is $g(f(4))$?

- $\frac{1}{6}$
- $\frac{9}{4}$
- $\frac{25}{4}$
- $\frac{3}{2}$

$$g(f(4)) = g\left(\frac{1}{4}\right)$$

$$= \frac{1}{4} + 2$$

$$= \frac{1+8}{4} = \frac{9}{4}$$

Question No. 7

The Solution set of $|2x| - 18 > -12$ is

- ○ ∅
- ✓ $(-\infty, \infty)$
- ○ $(-\infty, -3) \cup (3, \infty)$
- $(-3, 3)$

$$|2x| > -12 + 18$$

$$|2x| > 6$$

$$2x > 6 \quad \text{or} \quad 2x < 6$$

$$x > 3 \quad , \quad x < -3$$

The equation $y = 7^x$ can be written as

○ $y = \log_{\frac{1}{7}} x$

○ $x = \log_{\frac{1}{7}} y$

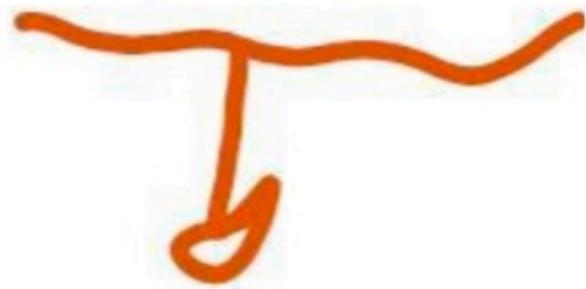○ $y = \log_7 x$

✓ $x = \log_7 y$

Find the domain and the range of the function $f(x) = (x+8)^2 - 7$

- ○ Domain $(-8, \infty)$, range $(-\infty, \infty)$
- ☑ Domain $(-\infty, \infty)$, range $[-7, \infty)$
- ○ Domain $(-\infty, \infty)$, range $(-8, \infty)$
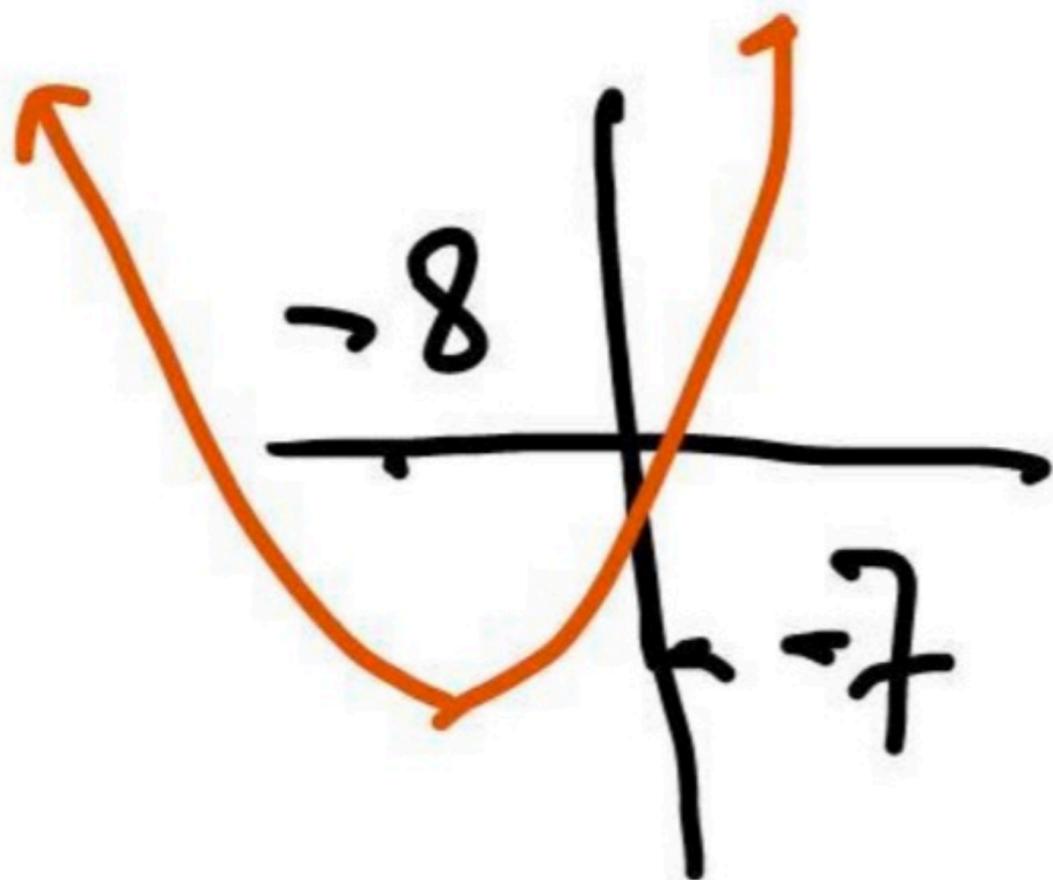- ○ Domain $(-7, \infty)$, range $(-\infty, \infty)$

vertex

$(-8, -7)$

Domain

$(-\infty, \infty)$

Range

$[-7, \infty)$

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

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

Question No. 27

The inverse of $f(x) = \dfrac{x+4}{3x-5}$, $x \neq \dfrac{5}{3}$, is

(i) $f^{-1}(x) = \dfrac{5x-4}{x-1}$, $x \neq 1$.

(ii) $f^{-1}(x) = \dfrac{x-4}{3x-1}$, $x \neq \dfrac{1}{3}$.

(iii) $f^{-1}(x) = \dfrac{5x-4}{3x-1}$, $x \neq \dfrac{1}{3}$.

✓ (iv) $f^{-1}(x) = \dfrac{5x+4}{3x-1}$, $x \neq \dfrac{1}{3}$.

$$y = \dfrac{x+4}{3x-5}$$

$$x = \dfrac{y+4}{3y-5}$$

$$y(3x-1) = 5x+4$$

$$y = \dfrac{5x+4}{3x-1}$$

Question No. 26

Which of the following functions is one-to-one

- $f(x) = -2x^2 + 5$
- $f(x) = \sqrt{16 - x^2}$
- ✓ $f(x) = -2x + 5$
- $f(x) = 5x^2 - 1$

لانه الدالة
التربيعية
ليست

١ – ١

The range of $f(x) = -x^2$ is

○ $(-\infty, -1]$

○ $(0, \infty)$

○ $(-\infty, 0]$

○ $[-1, \infty)$

Question No. 3

If a>b and c is a real number, then

- ✓ $b - c < a - c$
- ○ $b - c > a - c$
- ○ $b - c \geq a - c$
- ○ $b - c \leq a - c$

الفَقَّهُ
يا .
مَكَم
a

The Solution set of $|4 + 8x| > -20$ is

- ○ $(-\infty, -3) \cup (2, \infty)$
- ✓ $(-\infty, \infty)$
- ○ $(2, \infty)$
- ○ $\emptyset$

Question No. 17

Write the equation of the line passes through (–5,6), and prependicular to the line x = -2

○ -5x + 6y = -2

○ x = -5

○ y = 6

○ 5x + 6y = 2

خط رأسي

العامودي عليه دائماً هو

خط أفقي

$$y = 6$$