تجميع

ABEER

دعواتكم

Question No. 15

The condition for continuity of $f(x)$ at a point c of its domain is

- $\lim_{x \to \infty} f(x) = x$
- $\lim_{x \to \infty} f(x) = f(x)$
- $\lim_{x \to \infty} f(x) = c$
- $\lim_{x \to c} f(x) = f(c)$

Save & Next

Question No. 33

Which of the following points are on the graph of $f(x) = 4 + 2\log_3(1 - 2x)$?

- $(3, 1)$, $(1, 0)$ and $(\frac{1}{3}, -1)$
- $(0, 4)$, $(-1, 6)$ and $(\frac{1}{3}, -2)$
- $(0, 6)$, $(-1, 4)$ and $(\frac{1}{3}, 2)$
- $(0, 4)$, $(-1, 6)$ and $(\frac{1}{3}, 2)$

Question No. 2

Find the function $f(x)$ such tha

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

Total questions in exam: 40 | Answered: 15

Question No. 27

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

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

Save & Next حفظ والتالي

ns in exam: 40 | Answered: 5

Question No.

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

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

Question No. 28

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

- if $x_1 > x_2$, then $f(x_1) \leq f(x_2)$,
- 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 $f(x_1) = f(x_2)$.

Question No. 31

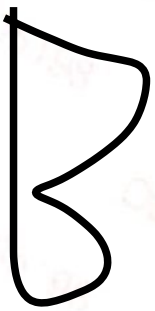
Given that $3^{x-1} = 4^x$ then $x =$

- $\frac{\ln 4}{\ln 3 - \ln 4}$
- $\frac{\ln 3}{\ln 3 + \ln 4}$
- $\frac{\ln 3}{\ln 3 - \ln 4}$
- $\frac{\ln 4}{\ln 3 + \ln 4}$

Question No. 26

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

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



Question No. 2

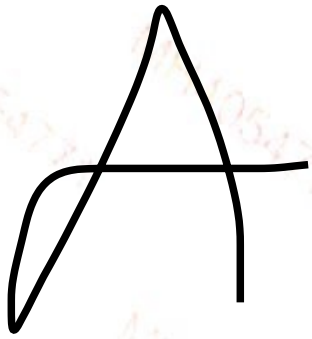
Find the function $f(x)$ such tha

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

Question No. 18

Which of the following inequalities is false?

- $\frac{1}{1+x^2} > 1.$
- $x \leq x.$
- $\frac{1}{1+x^2} \leq 1.$
- $x^2 \leq x^2 + 1.$



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Question No. 2

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

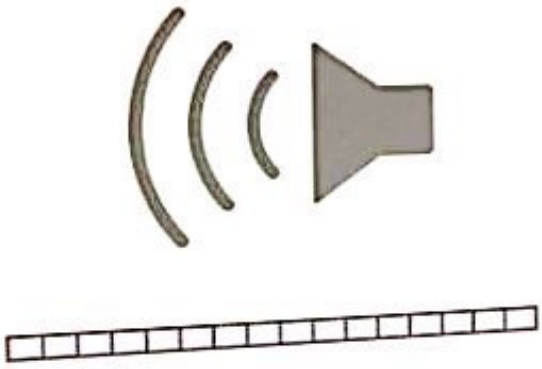
Question No. 1

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

- 0
- Does not exist
- 2
- 1

B

مستوى الصوت



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Question No. 5

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

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

Save & Next محفوظ اگلی

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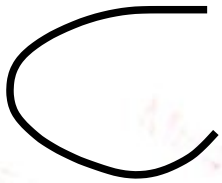
The range of the function $f(x) = 5^{4x}$ is

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



Save & Next حفظ والتالي

Question No. 10

Evaluate $\lim_{x \to -\infty} \frac{2x}{x^3 - 4} =$

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

Save & Next

Question No. 33

Which of the following points are on the graph of $f(x) = 4 + 2\log_3(1 - 2x)$?

- $(3, 1)$, $(1, 0)$ and $(\frac{1}{3}, -1)$
- $(0, 4)$, $(-1, 6)$ and $(\frac{1}{3}, -2)$
- $(0, 6)$, $(-1, 4)$ and $(\frac{1}{3}, 2)$
- $(0, 4)$, $(-1, 6)$ and $(\frac{1}{3}, 2)$

ve & Next حفظ والتالي

Question No. 18

Which of the following inequalities is false?

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

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

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

Save & Next

Question No. 5

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

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

Save & Next

Question No. 8

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

D

Save & Next

Question No. 4

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

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

Save & Next

Total questions in exam: 40 | Answered: 0

Question No. 16

The vertical asymptote to the graph of $f(x) = \log_5(x + 1)$

- x = 1
- y = 1
- x = -1
- y = 5

Save & Next حفظ والتالي

Question No. 4

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

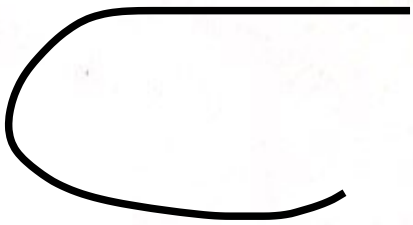
- $(-\infty, 2a - \frac{1}{5}]$
- $[2a + \frac{1}{5}, \infty)$
- $(-\infty, 2a + \frac{1}{5}]$
- $(-\infty, 2a + \frac{1}{5})$

Save & Next

Question No. 17

For the graph of $f(x) = -3(5)^{1-2x} + 4$, the line

- $y = -3$ is its horizontal asymptote.
- $x = 4$ is its vertical asymptote.
- $y = 4$ is its horizontal asymptote.
- $x = \frac{1}{2}$ is its vertical asymptote.



Save & Next حفظ والتالي

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

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

Save & Next

Question No. 15

The complement of the angle 60° is:

- 140°
- 120°
- 70°
- 30°

Save & Next حفظ والتالي

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

Question No. 14

The expression $(1 + \tan^2\theta)$ equals

- $\sec^2\theta$
- $\cos^2\theta$
- $\csc^2\theta$
- $\sin^2\theta$

A

Save & Next حفظ والتالي

Total questions in exam: 40 | Answered: 0

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

Question No. 12

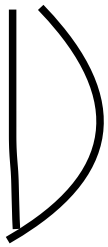
Compute the product $(x-2)(x-3)$

x^2-6x+5

x^2-5x+6

x^2-5x-6

x^2+5x+6



Save & Next

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

Question No. 14

The expression $(1 + \tan^2\theta)$ equals

- $\sec^2\theta$
- $\cos^2\theta$
- $\csc^2\theta$
- $\sin^2\theta$

Save & Next محفظ والتالي

Question No. 11

Solve: $6x^2 + 7x - 3 = 0$

- $x = 2 + i \quad or \; x = 2 - i$
- $x = \frac{1}{3} \quad or \; x = \frac{-3}{2}$
- $x = \frac{3}{2} \quad or \; x = -\frac{1}{3}$
- $x = 3 \quad or \; x = -1$

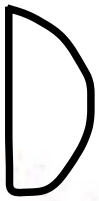
B

Save & Next

Question No. 10

Evaluate $\lim_{x \to -\infty} \frac{2x}{x^3 - 4} =$

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



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Total questions in exam: 40 | Answered: 0

Question No. 8

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

Save & Next حفظ والتالي

Total questions in exam: 40 | Answ

Question No. 5

The function $f(x)=\begin{cases} x^2 & \text{if } x\le 2 \\ k-x^2 & \text{if } x>2 \end{cases}$ is continuous if

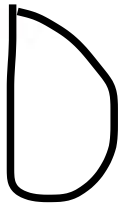
- k=-4
- k=4
- k=2
- k=8

Save & Next حفظ والتالي

Question No. 7

The solution set of the equation $16x + 16 = 1 + 13x$ is

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



Total questions in exam: 40 | Answered: 0

Question No. 4

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

$y = -3$

$x = 2$

$x = -2$

$x = 3$

$y = -3$

Save & Next حفظ والتالي

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

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

Save & Next حفظ والتالي

Total questions in exam: 40

Question No. 1

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

- 0
- Does not exist
- 2
- 1

B

Save & Next محفظ والتالی

Question No. 5

Solve $ax^2 + bx + c = 0$

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

B

Total questions in exam: 40

Question No. 1

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

- 0
- Does not exist
- 2
- 1

Save & Next حفظ والتالي

Question No. 3

The slope of the vertical line is

- 0
- Undefined
- -1
- 1

B

Save & Next حفظ والتالي

Question No. 4

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

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

Save & Next حفظ والتالي

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

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

Save & Next

Question No. 4

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

Save & Next حفظ والتالي

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

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

Save & Next

Question No. 3

The slope of the vertical line is

- 0
- Undefined
- -1
- 1

Save & Next حفظ والتالي

Question No. 17

Factor the following: $a^2 + ab - ar - rb$

- $(a - b)(a + r)$
- $(a + b)(a + r)$
- $(a + b)(a - r)$
- $(a - b)(a - r)$

C

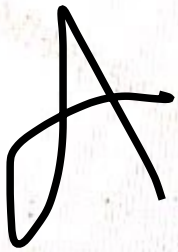
Save & Next حفظ والتالي

Total questions in exam: 40 | Answered: 2

Question No. 7

Simplify the expression. $\sqrt{-16}$

- is not a real number
- -4
- -8
- 4



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Total questions in exam: 40

Question No. 1

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

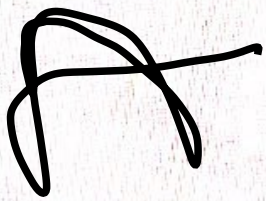
- 0
- Does not exist
- 2
- 1

Save & Next حفظ والتالي

Question No. 18

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

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



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

Question No. 16

The vertical asymptote to the graph of $f(x) = \log_5(x+1)$

- x = 1
- y = 1
- x = -1
- y = 5

Save & Next حفظ والتالى

Question No. 17

For the graph of $f(x) = -3(5)^{1-2x} + 4$, the line

- $y = -3$ is its horizontal asymptote.
- $x = 4$ is its vertical asymptote.
- $y = 4$ is its horizontal asymptote.
- $x = \frac{1}{2}$ is its vertical asymptote.

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Total questions in exam: 40 | Answered: 0

Question No. 16

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- y = 1
- x = -1
- y = 5

Save & Next حفظ والتالي

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

Question No. 14

The expression $(1 + \tan^2\theta)$ equals

- $\sec^2\theta$
- $\cos^2\theta$
- $\csc^2\theta$
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Save & Next محفظ والتالي

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

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Save & Next حفظ والتالي

Question No. 15

The complement of the angle 60° is:

- 140°
- 120°
- 70°
- 30°

Save & Next حفظ والتالي

Question No. 12

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

x^2-6x+5

x^2-5x+6

x^2-5x-6

x^2+5x+6

Save & Next

Total questions in exam: 40 | Answered: 0

Question No. 11

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- $x = \frac{1}{3} \quad or \; x = \frac{-3}{2}$
- $x = \frac{3}{2} \quad or \; x = -\frac{1}{3}$
- $x = 3 \quad or \quad x = -1$

Save & Next محفوظ اگلا

Total questions in exam: 40 | Answered: 0

Total questions in exam: 40 | Answered: 0

Question No. 8

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

Save & Next حفظ والتالي

Question No. 10

Evaluate $\lim_{x \to -\infty} \frac{2x}{x^3 - 4} =$

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

Save & Next حفظ والتالي

Question No. 4

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

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

Save & Next حفظ والتالي

Question No. 5

The function $f(x)=\begin{cases} x^2 & \text{if } x\le 2 \\ k-x^2 & \text{if } x>2 \end{cases}$ is continuous if

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- k=4
- k=2
- k=8

Save & Next حفظ والتالي

Question No. 7

The solution set of the equation $16x + 16 = 1 + 13x$ is

- {5, - 5}
- {5}
- ∅
- {-5}

Question No. 4

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

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

Save & Next حفظ والتالي

Question No. 3

The slope of the vertical line is

- 0
- Undefined
- -1
- 1

Save & Next حفظ والتالي

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

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

Save & Next حفظ والتالي

Question No. 1

For the graph of $f(x) = -3(5)^{1-2x} + 4$, the line

- $x = 4$ is its vertical asymptote.
- $y = 4$ is its horizontal asymptote.
- $x = \frac{1}{2}$ is its vertical asymptote.
- $y = -3$ is its horizontal asymptote.

Question No. 2

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

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

B

Save & Next حفظ وتالي

Total questions in exam: 40

Question No. 1

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

- 0
- Does not exist
- 2
- 1

Save & Next محفوظ اگلی

Question No. 2

Find the function $f(x)$ such tha

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

Question No. 4

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

- not defined
- decreasing
- increasing
- constant

B

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Total questions in exam: 40 | Answered: 27

Question No. 25

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

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

B

Question No. 9

Given that $f(x) = 3^{2x+1} - 1$. Then $f(-1) =$

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

Question No. 8

The supplement of the angle 50° is:

- 40°
- 150°
- 50°
- 130°

Save & Next

The function $f(x)=\begin{cases} x^2 & \text{if } x \leq \\ k-x^2 & \text{if } x > \end{cases}$

- k=4
- k=2
- k=8
- k=-4

Question No. 33

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

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

B

Question No: 14

The domain of the function $f(x) = \sqrt{3^{2x+1} + 5}$ is

- $(-\infty, \infty)$
- $(1, \infty)$
- $(5, \infty)$
- $(-\infty, 2)$

Save & Next

Four questions in exam 45 | Answered: 2

Question No. 2

The complement of the angle 65° —

- 25°
- 115°
- 75°
- 115°

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

Question No. 20

Evaluate $\lim_{x \to -\infty} \frac{x^4+2x^2-1}{x^3-2x-2} =$

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

C

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

Question No. 19

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

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

B

Question No. 20

Evaluate $\lim_{x \to -\infty} \frac{x^4+2x^2-1}{x^3-2x-2} =$

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

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

Question No. 16

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

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

D

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

Question No. 17

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

- 1
- 4
- -3
- 0

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

Question No. 18

If $0^\circ < \theta < 90^\circ$ then θ is called

- a straight angle
- a right angle
- an obtuse angle
- an acute angle

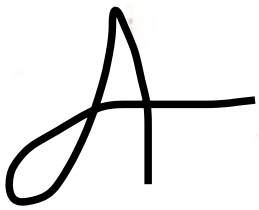
D

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

Question No. 14

Let $U = \{0,1,2,3,4,5,6,7,9\}$, and $A = \{0,1,2,5,7\}$ the complement of A is

- $\{3,4,6,9\}$
- $\{1,3,5,7\}$
- $\emptyset$
- $\{1,2,3,4,5,6,7\}$



Question No. 13

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

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

Question No. 15

The solution set of the equation $-1+\log_8(3x+2)=-\frac{1}{3}$ is

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

D

Question No. 12

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

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

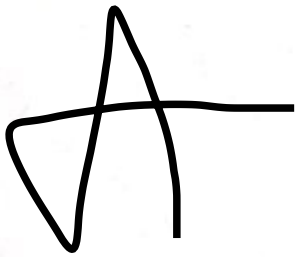
D

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

Question No. 11

Which of the following is a pair of inverse functions?

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



Question No. 11

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- $f(x) = 2x - 1$, *where* $x \in \mathbb{R}$, and $g(x) = x + \frac{1}{2}$, *where* $x \in \mathbb{R}$.
- $f(x) = x$, *where* $x \in \mathbb{R}$, and $g(x) = -x$, *where* $x \in \mathbb{R}$.

Question No. 8

If $\cos\theta = \frac{4}{5}$ then $\sec\theta =$

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

A

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

Question No. 9

Find the sum $\frac{3}{2y} - \frac{5}{2y}$

- $\frac{1}{4y}$
- $\frac{11}{4y^2}$
- $\frac{1}{y}$
- $-\frac{1}{y}$

D

Question No. 10

$\csc\theta =$

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

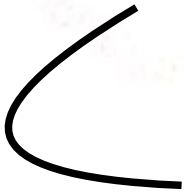
B

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

Question No. 7

The slopes of two parallel lines are

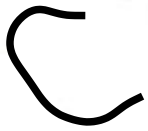
- different
- 0
- equal
- undefined



Question No. 3

Evaluate $\lim_{x \to -1} \frac{3x^4 + x + 1}{x + 4} =$

- 3
- -4
- 1
- 0



Question No. 4

Simplify $\left(\frac{-4n^6m^4}{m^2}\right)^{1/2}$ where $m \neq 0$

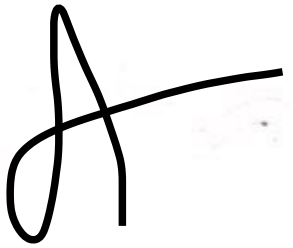
- $-8n^9m^3$
- Is not a real number
- $\frac{1}{8n^9m^3}$
- $-\frac{1}{8n^9m^3}$

B

Question No. 6

Factoring $x^3 + y^3$ gives

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



Question No. 5

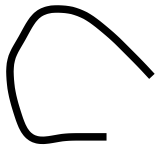
Writing $\frac{-8+\sqrt{-128}}{8}$ in standard form of complex numbers gives

- $-1+\sqrt{2}$
- $-1-\sqrt{2}$
- $-1-i\sqrt{2}$
- $-1+i\sqrt{2}$

Question No. 2

The complement of the angle 45° is:

- 135°
- 125°
- 45°
- 55°



Question No. 39

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

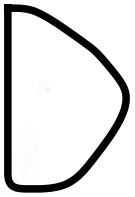
- (2,-1)
- (0,-1)
- (-1,-7)
- (1,1)

D

Question No. 40

If $a \neq 1$ is a positive real number such that $5^x = a$ then $x =$

- $\ln(\frac{a}{5})$
- $\ln(\frac{5}{a})$
- $\frac{\ln 5}{\ln a}$
- $\frac{\ln a}{\ln 5}$



Question No. 1

The solution set of the equation $\log_5(x+2) + \log_5(x-2) = 1$ is

- {3}
- ∅
- {-3,3}
- {-3}

A

Question No. 38

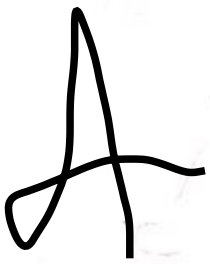
Solve: $2x^2 - 13x + 15 = 0$

- $x = \frac{3}{2}$ or $x = 5$
- $x = 2 + 3i$ or $x = 2 - 3i$
- $x = \frac{7}{2}$ or $x = -5$
- $x = 3$ or $x = 15$

Question No. 37

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

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



Question No. 36

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

- 3
- 0
- -3
- ∞

D

Question No. 44

Find the domain of $f(x) = \sqrt{|x| - 1}$

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

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

Question No. 31

Evaluate $\lim_{x \to -\infty} \frac{3x^2 + x + 2}{x^2 + 6x + 1} =$

- 4
- 3
- 2
- 1

B

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

Question No. 28

Solve $|2x - 3| = 5$

- {1,-3}
- {4,-1}
- {1,-4}
- {-1,1}

B

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

Question No. 29

The supplement of the angle 58° is:

- 122°
- 130°
- 32°
- 40°

A

Question No. 32

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

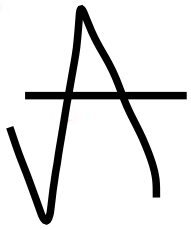
- $a \in (-\infty, 1] \cup [2, \infty)$
- $a \in (1, 2)$
- $a \in (-\infty, 1)$
- $a \in (2, \infty)$

B

Question No. 34

Solve the inequality $\dfrac{x^2+10x+25}{x+1} \geq 0$

- $\{-5\} \cup (-1, +\infty)$
- $(-5, -1)$
- $(-1, +\infty)$
- $[-5, +\infty)$



Question No. 35

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

- 17
- 14
- 16
- 15

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

Question No. 32

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

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

Question No. 30

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

Question No. 22

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

- 6
- -3
- 9
- 4

C

Question No. 21

The domain of the function $f(x) = 1 - \log_4(x - 2)$ is

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

A

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

Question No. 25

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

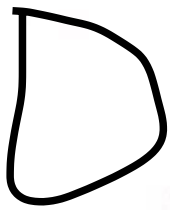
- $f(a) = -a$
- $f(-a) \neq 0$
- $f(-a) = 0$
- $f(a) = 0$

C

Question No. 24

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

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



Question No. 23

The degree of the polynomial $52x^2(x^2-3x-52)$ is

- -52
- 2
- 4
- 52

C

Question No. 26

The horizontal asymptote to the graph of $f(x) = 3^{x-1} + 2$.

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

Question No. 27

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

- 6
- -2
- 2
- 1

B

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

Question No. 27

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

- 6
- -2
- 2
- 1