Multiple choices 1/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D

(Choose 1 answer)

(See picture)

A. (iii)

B. (ii)

C. (i)

D. None of the other choices is correct

Next

Let A, B, C be matrices.

Choose the **incorrect** statement.

(i) If A+B=A+C then B and C have the same size.

(ii) If A is square then $(A^T)^3=(A^3)^T$

(iii) If $A \neq 0$ then $A^2 \neq 0$

- [ ] I want to finish the exam.

Finish

Exit

Multiple choices 2/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D

Next

(Choose 1 answer)

Let A be a 7x9 matrix. Which of the following statements are FALSE?

(i) Matrix A can have independent columns

(ii) Matrix A can have independent rows

(iii) The null space of A can have dimension 1.

A. (i) and (ii)

B. (ii) and (iii)

C. (i) and (iii)

D. None of the other choices is correct

- [ ] I want to finish the exam.

Finish

Exit

Multiple choices 3/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D

Next

(Choose 1 answer)

(See picture)

A. (i)

B. (ii)

C. None of the other choices is correct

D. (i) and (ii)

Which of the following is convergent?

(i) $\int_1^{\infty} \frac{\sin^2 x}{x^5} dx$

(ii) $\int_0^{\infty} e^{7x} dx$

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

- [ ] I want to finish the exam.

Finish

Exit

Multiple choices 4/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. None of the other choices is correct

B. (2,2)

C. (1,1)

D. (1,2)

E. (2,1)

Let $T : R^3 \to R^2$ be a linear transformation such that

$T(1,1,1) = (0,1)$, $T(1,1,0) = (1,0)$ and $T(1,0,0) = (1,1)$.

Find $T(3,2,1)$.

I want to finish the exam.

Finish

Exit

Multiple choices 5/50

Answer

(Choose 1 answer)

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

Find all a, b and c such that the set

[1 2 1 1], [2 1 -1 -3], [a b c 3]

is orthogonal.

A. a = s + 7, b = -s - 5, c = s

B. a = 4s, b = 4s - 3, c = s

C. a = s - 6, b = 3s+3, c = s

D. a = s + 5, b = s - 7, c = s

E. None of the other choices is correct

- [ ] I want to finish the exam.

Finish

Exit

Multiple choices 6/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. (s/4; s/4 + t, s, t)

B. (s/4 ; s/4 - t, s, t)

C. (s/4 ; -s/4 + t, s, t)

D. None of the other choices is correct

E. (-s/4 ; -s/4 - t, s, t)

Solve the homogeneous system

$$\begin{cases} 3x_1 + x_2 + x_3 + x_4 = 0 \\ 5x_1 - x_2 + x_3 - x_4 = 0. \end{cases}$$

.

- [ ] I want to finish the exam.

Finish

Exit

Multiple choices 7/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. None of the other choices is correct

B. (ii)

C. (iii)

D. (iv)

E. (i)

Differentiate $y = \sqrt{1 - 10x}$

(i) $dy/dx = -\dfrac{5}{\sqrt{1 - 10x}}$

(ii) $dy/dx = -\dfrac{10}{\sqrt{1 - 10x}}$

(iii) $dy/dx = \dfrac{5}{\sqrt{1 - 10x}}$

(iv) $dy/dx = -\dfrac{5x}{\sqrt{1 - 10x}}$

I want to finish the exam.

Finish

Exit

Multiple choices 8/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. -22 ft/s

B. -54 ft/s

C. -70 ft/s

D. -38 ft/s

E. -150 ft/s

A ball is thrown upward with a speed of 10 ft/s from the top of a 350-foot-tall building. After t seconds, its height above the ground is given by

$$s(t) = -16t^2 + 10t + 350.$$

Determine the velocity of the ball when it hits the ground.

I want to finish the exam.

Finish

Exit

Multiple choices 9/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. (1, 1, -2)

B. (6, -2, -2)

C. (7, 1, 2)

D. None of the other choices is correct

E. (6, 2, 2)

Let ABCD be a parallelogram with A(1, 2, 3), C(3, 0, 1). Assume that M(0, 1, 2) is the midpoint of AB. Find the coordinates of vector $\overrightarrow{BD}$.

I want to finish the exam.

Finish

Exit

Multiple choices 10/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. None of others

B. (-5/13, 51/13)

C. (5/13, -51/13)

D. (5/13, 51)

E. (-5/13, 1/13)

Find the point on the line $y = 5x + 2$ that is closest to the origin.

Multiple choices 11/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. 3

B. -27

C. 27

D. All of the other choices are incorrect

E. -3

Let A, B be 4×4 matrices with $\det A = 3$ and $\det B = -1$. Find $\det\left(A^{-1}(3B)^T\right)$.

I want to finish the exam.

Finish

Exit

Multiple choices 12/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. -1

B. None of the other choices is correct

C. 4

D. 1

E. -4

Let A be the matrix that satisfies :

$$A^T - \begin{bmatrix} 0 & -11 & 7 \\ -1 & -7 & 18 \\ 1 & -6 & 13 \end{bmatrix} = \begin{bmatrix} 2 & 3 & -1 \\ 1 & 1 & -2 \\ -1 & 2 & 1 \end{bmatrix}$$

Find the $(2,3)$-entry of A.

I want to finish the exam.

Finish

Exit

Multiple choices 13/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

Find an equation of the plane passing through the points

(8, 0, 0), (0, -2, 0), (0, 0, 4).

A. x-4y+2z-8=0

B. x+4y-2z-8=0

C. x+4y+2z-8=0

D. x-4y+2z+8=0

E. -x+4y+2z-8=0

- [ ] I want to finish the exam.

Finish

Exit

Multiple choices 14/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E
- [ ] F

Next

(Choose 1 answer)

(See picture)

A. (iii)

B. (v)

C. None of the other choices is correct

D. (i)

E. (iv)

F. (ii)

Let S be the transformation induced by the matrix

$$\begin{bmatrix} 1 & 1 & 1 \\ 0 & 1 & 1 \\ 0 & 0 & 2 \end{bmatrix}.$$

Calculate $S([1\ 2\ 1]^T)$.

(i) $[3\ 2\ 2]^T$
(ii) $[4\ 3\ 2]^T$
(iii) $\vec{0}$
(iv) $[2\ 3\ 4]^T$
(v) $[2\ 2\ 3]^T$

I want to finish the exam.

Finish

Exit

Multiple choices 15/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. 1/4

B. 3/4

C. 5/4

D. None of the other choices is correct

E. 1/2

Find $y'(1)$ for $y = \dfrac{t^2 - 6t + 1}{t^2 + 5t - 2}$

.

I want to finish the exam.

Finish

Exit

Multiple choices 16/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. None of the other choices is correct

B. -2

C. 8

D. -1

E. 5

Find the (1, 2)-entry of the matrix A that satisfies

$$\left(\frac{1}{2}A^T - 2I\right)^{-1} = \begin{bmatrix} 4 & 2 \\ 1 & 1 \end{bmatrix}$$

I want to finish the exam.

Finish

Exit

Multiple choices 17/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. -1/2

B. 1/2

C. -1/8

D. None of the other choices is correct

E. 1/8

Let

$$A = \begin{bmatrix} 1 & 2 & 0 \\ 3 & 0 & 1 \\ -1 & 2 & 2 \end{bmatrix}$$

Find the determinant of the matrix $2A^{-1}$

Multiple choices 18/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D

(Choose 1 answer)

(See picture)

A. (ii)

B. None of the other choices is correct

C. (i)

D. (i) and (ii)

Next

Which of the following subsets are independent in $\mathbb{R}^4$?

(i) $\{[1\ \ 2\ \ 3\ \ 4]^T,\ [2\ \ 0\ \ 1\ \ -1]^T,\ [1\ \ -1\ \ 0\ \ 3]^T\}$

(ii) $\{[2\ \ 0\ \ 1\ \ -1]^T,\ [1\ \ 2\ \ -1\ \ 1]^T,\ [3\ \ 2\ \ 0\ \ 0]^T\}$

I want to finish the exam.

Finish

Exit

Multiple choices 19/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. None of the other choices is correct

B. 8.975

C. 10.005

D. 12.045

E. 9.655

Use the Midpoint Rule with $n = 4$ to estimate the value of the integral $\int_4^6 f(x)\,dx$

x	4.00	4.25	4.50	4.75	5.00	5.25	5.50	5.75	6.00
$f(x)$	4.19	4.37	4.53	4.69	4.84	4.99	5.13	5.26	5.38

Multiple choices 20/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

Describe how the graph of

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

is obtained from the graph of $y = f(x)$.

A. Shift 2 units to the right then shift 3 units up.

B. Shift 2 units to the left then shift 3 units up.

C. Shift 2 units to the right then shift 3 units down.

D. Shift 2 units to the left then shift 3 units down

E. None of the other choices is correct

- [ ] I want to finish the exam.

Finish

Exit

Multiple choices 21/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

Let P(a, b, c) be the point on the plane x + y + z = 1 that is closest to the point M(0, 0, 0). Find a.

A. none of the other choices is true

B. 1/3

C. 1/2

D. 1

E. 0

- [ ] I want to finish the exam.

Finish

Exit

Multiple choices 22/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. (iii)

B. (ii)

C. None of the other choices is correct

D. (iv)

E. (i)

Which of the following matrix has reduced echelon-form?

$$\begin{bmatrix} 1 & 3 & -1 & 2 \\ 0 & 1 & 2/7 & -6/7 \\ 0 & 0 & 1 & 25 \end{bmatrix}$$

(i)

$$\begin{bmatrix} 1 & 0 & 0 & 3 \\ 0 & 1 & 0 & -8 \\ 0 & 0 & 1 & 25 \end{bmatrix}$$

(ii)

$$\begin{bmatrix} 1 & 0 & -1 & -22 \\ 0 & 1 & 0 & -8 \\ 0 & 0 & 1 & 25 \end{bmatrix}$$

(iii)

$$\begin{bmatrix} 1 & 3 & -1 & 2 \\ 0 & 1 & 0 & -8 \\ 0 & 0 & 1 & 25 \end{bmatrix}$$

(iv)

Multiple choices 23/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. (2/3)x + 1

B. 3x + 2

C. 2x - 7

D. 3x - 1

E. None of the other choices is correct

Find the linear approximation for

$f(x) = \sqrt[3]{1+2x}$ at $x = 0$

- [ ] I want to finish the exam.

Finish

Exit

Multiple choices 24/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D

(Choose 1 answer)

(See picture)

A. V only

B. U only

C. Both U and V

D. None of them

Next

Which sets are subspaces of R^3?

$$U = \{(1, s, t) |\ s \text{ and } t \text{ in } R\}$$

$$V = \{(2r, -s^2, t) |\ r, s \text{ and } t \text{ in } R\}$$

I want to finish the exam.

Finish

Exit

Multiple choices 25/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E
- [ ] F

Next

(Choose 1 answer)

(See picture)

A. 0 and 3

B. 0 and -3

C. -3 only

D. 3 only

E. None of the other choices is correct

F. 0 only

Determine where f is discontinuous.

$$f(x) = \begin{cases} \sqrt{-x} & if \quad x < 0 \\ 3 - x & if \quad 0 \leq x < 3 \\ (3-x)^2 & if \quad x > 3 \end{cases}$$

.

I want to finish the exam.

Finish

Exit

Multiple choices 26/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. [0, 1] and [1, 0]

B. [1; 1] and [1; -1]

C. None of the other choices is correct

D. [1, 5] and [1, -1]

E. [1, -5] and [1, -1]

Find a set of basic eigenvectors of the matrix

$$\begin{bmatrix} 2 & 3 \\ 3 & 2 \end{bmatrix}$$

Multiple choices 27/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. None of the other choices is correct

B. (ii)

C. (iii)

D. (iv)

E. (i)

Determine where the function

$f(x) = 6x - x^3$

is concave up and where it is concave down.

(i) Concave down on $(-\infty, 0)$ and concave up on $(0,\infty)$

(ii) Concave up on $(-\infty, \infty)$

(iii) Concave down on $(-\infty, \infty)$

(iv) Concave up on $(-\infty, 0)$ and concave down on $(0,\infty)$

Multiple choices 28/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E
- [ ] F

Next

(Choose 1 answer)

(See picture)

A. 0

B. -3/8

C. -1/8

D. None of the other choices is correct

E. 3/8

F. 1/8

Evaluate the limit, if it exists

$$\lim_{x \to 1} \frac{x^2 - 5x + 2}{x^4 + 8x + 7}$$

I want to finish the exam.

Finish

Exit

Multiple choices 29/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. 55

B. 60

C. 50

D. None of the other choices is correct

E. 70

Estimate the area under the graph of

$f(x) = 25 - x^2$

on $[0, 5]$ using 5 rectangles and right endpoints

.

I want to finish the exam.

Finish

Exit

Multiple choices 30/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E
- [ ] F

Next

(Choose 1 answer)

(See picture)

A. 1.9898

B. None of the other choices is correct

C. 1.8989

D. 1.9063

E. 1.9686

F. 1.8686

Use Newton's method with the specified initial approximation x_1 to find x_3, the third approximation to the root of the given equation. (Give your answer to four decimal places.)

$$x^4 - 13 = 0, \quad x_1 = 2$$

Multiple choices 31/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. Absolute maximum: -1/4, absolute minimum: -4

B. Absolute maximum: -1/2, absolute minimum: -4

C. None of the other choices is correct

D. Absolute maximum: -1/4, absolute minimum: -2

E. Absolute maximum: -1/2, absolute minimum: -2

Find the absolute maximum and absolute minimum values of

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

on $[1/2, 2]$.

Multiple choices 32/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E
- [ ] F

Next

(Choose 1 answer)

(See picture)

A. -1

B. None of the other choices is correct

C. positive infinity

D. negative infinity

E. 1

F. 0

Find the limit

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

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

I want to finish the exam.

Finish

Exit

Multiple choices 33/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. 0

B. 2

C. -2

D. 1

E. -1

Let $A = (a_{ij})$ be the 2x2 matrix of reflection in the x-axis followed by reflection in the line $y = x$.

Find a_{12}.

- [ ] I want to finish the exam.

Finish

Exit

Multiple choices 34/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. None of the other choices is correct

B. (iv)

C. (ii)

D. (i)

E. (iii)

Simplify the quotient $\frac{f(x+h)-f(x)}{h}$ for

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

(i) $\frac{-1}{(x+h)x}$

(ii) $\frac{1}{x^2}$

(iii) $\frac{1}{(x+h)x}$

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

I want to finish the exam.

Finish

Exit

Multiple choices 35/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. (iv)

B. (ii)

C. (i)

D. None of the other choices is correct

E. (iii)

Let $T: R^2 \rightarrow R^2$ be projection on the line $x - 2y = 0$. Find $T[-5, 6]^T$.

(i) $[-4/5, 2/5]^T$

(ii) $[2/5, -4/5]^T$

(iii) $[-8/5, -4/5]^T$

(iv) $[-4/5, -8/5]^T$

I want to finish the exam.

Finish

Exit

Multiple choices 36/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D

Next

(Choose 1 answer)

Let U = {(x, y, z)| 2x-y+z = 0} be a subspace of R^3. Which of the following statements are true?

(i) U = span{(1, 0, -2), (0, 1, 1)}

(ii) U = span {(1, 2, 0)}

A. (i) only

B. (ii) only

C. Both (i) and (ii)

D. None of the other choices is correct

- [ ] I want to finish the exam.

Finish

Exit

Multiple choices 37/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E
- [ ] F

Next

(Choose 1 answer)

(See picture)

A. (iv)

B. (v)

C. None of the other choices is correct

D. (ii)

E. (iii)

F. (i)

Find $\int x^3 e^{x^2} dx$.

(i) $e^{x^2} - x^2 + C$

(ii) $e^{x^2}(x^2 - 1)/2 + C$

(iii) $e^{x^2}(x^2 - 1) + C$

(iv) $e^x - x^3 + C$

(v) $e^{x^3} - x^3 + C$

I want to finish the exam.

Finish

Exit

Multiple choices 38/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. (ii)

B. (i)

C. All of other choices are incorrect

D. (iii)

E. (iv)

Given functions $f(x) = 2x + 1$ and $g(x) = x^2$.
Find $g \circ f(x)$

(i) $4x^2 + 1$

(ii) $2(x+1)^2$

(iii) $(2x+1)^2$

(iv) $2x^2 + 1$

I want to finish the exam.

Finish

Exit

Multiple choices 39/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D

Next

(Choose 1 answer)

(See picture)

A. 3/5

B. 6/5

C. 2/5

D. All of the other choices are incorrect

Find the second coordinate of the projection of the vector $\vec{u} = [1\ 2\ -1]^T$ on the vector $\vec{v} = [0\ 2\ 1]^T$

.

I want to finish the exam.

Finish

Exit

Multiple choices 40/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. 3.6, -3.6

B. None of the other choices is correct

C. 36

D. 72

E. 7.2, -7.2

Assume that $x = x(t),\ y = y(t)$ and $z = z(t)$ such that

$$[z(t)]^2 = [x(t)]^2 + 4[y(t)]^2.$$

Compute $\frac{dz}{dt}$ when $x = 3,\ y = 2,\ \frac{dx}{dt} = 4$ and $\frac{dy}{dt} = 3$.

I want to finish the exam.

Finish

Exit

Multiple choices 41/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. (iii)

B. (i)

C. None of the other choices is correct

D. (ii)

E. (iv)

Evaluate $\int \frac{e^{1/t^5}}{t^6} dt$

(i) $e^{1/t^5} + C$

(ii) $-(1/5)e^{1/t^5} + C$

(iii) $(1/5)e^{1/t^5} + C$

(iv) $-e^{1/t^5} + C$

I want to finish the exam.

Finish

Exit

Multiple choices 42/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. 213.5

B. 35

C. 30.5

D. 25.5

E. None of the other choices is correct

Find the average value of the function

$f(x) = 5x + 3$

over the interval $[2, 9]$

.

I want to finish the exam.

Finish

Exit

Multiple choices 43/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. (iii)

B. (i)

C. (ii)

D. (iv)

E. All of the other choices are incorrect

Given the relation $x^2 + xy^2 = 3$, find dy/dx.

(i) $-\dfrac{y}{2x}$

(ii) $-\dfrac{2x}{y^2}$

(iii) $-\dfrac{1}{y}$

(iv) $-\dfrac{y^2 + 2x}{2xy}$

I want to finish the exam.

Finish

Exit

Multiple choices 44/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E
- [ ] F

Next

(Choose 1 answer)

(See picture)

A. All numbers but -1

B. Does not exist

C. t = -1

D. t = 1

E. All numbers but 1

F. None of the other choices is corect

Find all values of t such that the system

$$\begin{cases} x + ty = 0 \\ tx + y = 2 \\ x + y = 1 \end{cases}$$

is consistent.

- [ ] I want to finish the exam.

Finish

Exit

Multiple choices 45/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. 1+a+b+c

B. (a+b+c)/2

C. None of the other choices is correct

D. 1-abc

E. abc

Evaluate the determinant of the matrix

$$\begin{bmatrix} 1+a & a & a \\ b & 1+b & b \\ c & c & 1+c \end{bmatrix}$$

I want to finish the exam.

Finish

Exit

Multiple choices 46/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D

(Choose 1 answer)

(See picture)

A. (i)

B. (ii)

C. (iii)

D. None of the other choices is correct

Next

Find the characteristic polynomial of the matrix:

$$\begin{bmatrix} 3 & 4 \\ 5 & 6 \end{bmatrix}$$

(i) $-X^2 + 9X - 2$

(ii) $X^2 + 9X - 2$

(iii) $X^2 - 9X - 2$

- [ ] I want to finish the exam.

Finish

Exit

Multiple choices 47/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. (iv)

B. (iii)

C. (i)

D. (ii)

E. None of the other choices is correct

Express the limits as a definite integral over $[0,2]$

$$\lim_{n\to\infty}\sum_{i=1}^{n}(5(x_i^*)^2-3(x_i^*)^3)\,\Delta x$$

(i) $\int_1^2 (5x^2-3x^3)dx$

(ii) $\int_0^2 (5x^2-3x^3)dx$

(iii) $\int_0^1 (5x^2-3x^3)dx$

(iv) $\int_0^2 (4x^2-3x^3)dx$

I want to finish the exam.

Finish

Exit

Multiple choices 48/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. -(1+sin x)cos x

B. -(1+sin x)sin x

C. (1+sin x)cos x

D. None of the other choices is correct

E. (1+sin x)sin x

Find the derivative of the function

$$g(x) = \int_{5}^{\sin x} (1+t)dt$$

- [ ] I want to finish the exam.

Finish

Exit

Multiple choices 49/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E

Next

(Choose 1 answer)

(See picture)

A. The system of linear equations is consistent for all a, b, and c

B. 3a-7b+11c = 0

C. 3a-7b-11c is non-zero

D. 3a-7b+11c is non-zero

E. 3a-7b-11c = 0

Find the condition on a, b, c such that the following system of linear equations is inconsistent

$$\begin{cases} x - 3y + z = a \\ 2x + 5y - 6z = b \\ x + 4y - 2z = c \end{cases}$$

I want to finish the exam.

Finish

Exit

Multiple choices 50/50

Answer

- [ ] A
- [ ] B
- [ ] C
- [ ] D

(Choose 1 answer)

(See picture)

A. (i)

B. None of the others.

C. (iii)

D. (ii)

Next

Find a basis for the subspace of R^3 defined as

$U = \{ [a \quad b \quad a-b]^T \mid a, b \text{ are real numbers} \}$.

(i) $\{[1\ 0\ 1]^T, [0\ 1\ -1]^T\}$

(ii) $\{[1\ 1\ 0]^T\}$

(iii) $\{[1\ 0\ 1]^T, [-1\ 0\ -1]^T, [0\ 1\ -1]^T\}$

I want to finish the exam.

Finish

Exit