Unit 6 - Week 5

Week 5 Assignment

The due date for submitting this assignment has passed. **Due on 2017-09-14, 23:59 IST.**

Submitted assignment

1) In Polynomial Interpolation Method, derivative of weight function at a point depends on *1 point*

- [ ] Derivative of the polynomial basis
- [ ] Points in the support domain including the point under consideration
- [ ] Points in the support domain excluding the point under consideration

No, the answer is incorrect.
Score: 0

Accepted Answers:
Derivative of the polynomial basis
Points in the support domain including the point under consideration

2) Moving Least Squares method utilizes *1 point*

- [ ] Weighted error minimization approach
- [ ] Weighted error maximization approach

No, the answer is incorrect.
Score: 0

Accepted Answers:
Weighted error minimization approach

3) Weight function in Moving Least Squares method should be *1 point*

- [ ] Positive valued within support domain
- [ ] Zero outside support domain
- [ ] Negative valued outside support domain
- [ ] Does not depend on support domain

No, the answer is incorrect.
Score: 0

Accepted Answers:
Positive valued within support domain
Zero outside support domain

4) Space Time Moving Least Squares method utilizes *1 point*

- [ ] Taylor Series expansion to represent derivatives
- [ ] Maclaurin Series expansion to represent derivatives

No, the answer is incorrect.
Score: 0

Accepted Answers:
Taylor Series expansion to represent derivatives

5) Space time polynomial basis for two-dimensional in space and one-dimensional in time contains *1 point*

- [ ] 11
- [ ] 9
- [ ] 8
- [ ] 10

No, the answer is incorrect.
Score: 0

Accepted Answers:
10

6) In weight function calculation for Space time Moving Least Squares method, norm correction is performed to *1 point*

- [ ] Neutralize the effect of order difference between spatial variables
- [ ] Neutralize the effect of order difference between spatial and temporal variables

No, the answer is incorrect.
Score: 0

Accepted Answers:
Neutralize the effect of order difference between spatial and temporal variables

7) *1 point*

In Scilab, execute **det(A)** [determinant] for $\mathbf{A} = \begin{pmatrix} 1 & 2 & -3 & 4 & 5 \\ 0 & 3 & -5 & -7 & 9 \\ 5 & -4 & 3 & -2 & 1 \\ 1 & 4 & -7 & -10 & 13 \\ -15 & 13 & 11 & -9 & 2 \end{pmatrix}$.

The determinant value is

- [ ] 3994
- [ ] 3394
- [ ] 3944

No, the answer is incorrect.
Score: 0

Accepted Answers:
3944

8) *1 point*

In Scilab, execute **inv(A)** [inverse] for $\mathbf{A} = \begin{pmatrix} 1 & 2 & -3 & 4 & 5 \\ 0 & 3 & -5 & -7 & 9 \\ 5 & -4 & 3 & -2 & 1 \\ 1 & 4 & -7 & -10 & 13 \\ -15 & 13 & 11 & -9 & 2 \end{pmatrix}$

The value of (3, 3) term of the inverse matrix is

- [ ] -0.1340241
- [ ] 0.1340241
- [ ] 0.2866184
- [ ] 0.1389452

No, the answer is incorrect.
Score: 0

Accepted Answers:
0.1389452

9) In Scilab, use **gausselim.sci** to solve the following problem *1 point*

$$\begin{pmatrix} 1 & 2 & -3 & 4 & 5 \\ 0 & 3 & -5 & -7 & 9 \\ 5 & 1 & 3 & -2 & 1 \\ 1 & 4 & -7 & 1 & 13 \\ 10 & 13 & 11 & -9 & 2 \end{pmatrix} \begin{Bmatrix} \phi_1 \\ \phi_2 \\ \phi_3 \\ \phi_4 \\ \phi_5 \end{Bmatrix} = \begin{Bmatrix} 37 \\ 8 \\ 13 \\ 57 \\ 43 \end{Bmatrix}$$

The value of ϕ_3 term is

- [ ] 1
- [ ] 2
- [ ] 3
- [ ] 4
- [ ] 5

No, the answer is incorrect.
Score: 0

Accepted Answers:
3

10) ***1 point***

In Scilab, use $\boldsymbol{\phi} = \mathbf{A} \setminus \mathbf{r}$ to solve the following problem $\mathbf{A} = \begin{pmatrix} \mathbf{1} & 2 & -3 & 4 & 5 \\ 0 & 3 & -5 & -7 & 9 \\ 5 & 1 & 3 & -2 & 1 \\ 1 & 4 & -7 & 1 & 13 \\ 10 & 13 & 11 & -9 & 2 \end{pmatrix}$ and $\mathbf{r} = \begin{Bmatrix} \mathbf{37} \\ 8 \\ 13 \\ 57 \\ 43 \end{Bmatrix}$

The value of ϕ_2 term is

- [ ] 1
- [ ] 2
- [ ] 3
- [ ] 4
- [ ] 5

No, the answer is incorrect.
Score: 0

Accepted Answers:
2

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