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NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » **Data Science for Engineers (course)**

 Announcements (announcements) **About the Course** (https://swayam.gov.in/nd1_noc20_cs28/preview)

Ask a Question (forum) Progress (student/home) Mentor (student/mentor)

Unit 7 - Week 5

Course outline

How does an NPTEL online course work?

Week 0

Week 1

Week 2

Week 3

Week 4

Week 5

☒ Multivariate Optimization With Equality Constraints (unit? unit=36&lesson=37)

☐ Multivariate Optimization With Inequality Constraints (unit? unit=36&lesson=38)

☐ Introduction to Data Science

Practice Assignment 5

The due date for submitting this assignment has passed. **Due on 2020-03-04, 23:59 IST.**
As per our records you have not submitted this assignment.

Note : This assignment is only for practice purpose and it will not be counted towards the Final score

1) For a function $f(x, y) = 2x^2 - xy + y^2 - 3x - y$, the stationary point (x, y) is **1 point**
(Hint: Stationary point is a solution to the first order necessary conditions for maxima or minima of $f(x, y)$)

- ☐ (0,1)
☐ (-1,0)
☐ (1,0)
☐ (1,1)

No, the answer is incorrect.

Score: 0

Accepted Answers:
(1,1)

2) The Hessian matrix of $f(x, y) = 2x^2 - xy + y^2 - 3x - y$ is **1 point**

- ☐ $\begin{bmatrix} -4 & 1 \\ 1 & -2 \end{bmatrix}$
☐ $\begin{bmatrix} 1 & -4 \\ -2 & 1 \end{bmatrix}$
☐

(unit?
unit=36&lesson=39)

☒ Solving Data
Analysis
Problems - A
Guided Thought
Process (unit?
unit=36&lesson=40)

☒ Dataset (unit?
unit=36&lesson=41)

☒ FAQ (unit?
unit=36&lesson=42)

☐ **Quiz : Practice
Assignment 5
(assessment?
name=94)**

☐ Quiz :
Assignment 5
(assessment?
name=118)

☐ Week 5
Feedback (unit?
unit=36&lesson=121)

☐ Solution -
Assignment 5
(unit?
unit=36&lesson=125)

Week 6

Week 7

Week 8

Text Transcripts

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$$\begin{bmatrix} 4 & -1 \\ -1 & 2 \end{bmatrix}$$

No, the answer is incorrect.
Score: 0

Accepted Answers:

$$\begin{bmatrix} 4 & -1 \\ -1 & 2 \end{bmatrix}$$

3) The Eigenvalues of Hessian matrix of $f(x, y) = 2x^2 - xy + y^2 - 3x - y$ is

1 point

- ☐ -1.585786, -4.414214
- ☐ 3.828427, -1.828427
- ☐ 4.414214, 1.585786
- ☐ -3.828427, 1.828427

No, the answer is incorrect.
Score: 0

Accepted Answers:

4.414214, 1.585786

4) The Hessian matrix of $f(x, y) = 2x^2 - xy + y^2 - 3x - y$ is

1 point

- ☐ positive definite
- ☐ positive semidefinite
- ☐ negative definite
- ☐ negative semidefinite

No, the answer is incorrect.
Score: 0

Accepted Answers:

positive definite

5) The function $f(x, y) = 2x^2 - 2y^2$

1 point

- ☐ has no stationary point
- ☐ has a stationary point at (1,1)
- ☐ has a stationary point at (1,-1)
- ☐ has a stationary point at (0,0)

No, the answer is incorrect.
Score: 0

Accepted Answers:

has a stationary point at (0,0)

