

Quiz 2

Due No due date

Points 4

Questions 5

Time Limit 30 Minutes

Allowed Attempts Unlimited

TAKE THE QUIZ AGAIN

Attempt History

	Attempt	Time	Score
KEPT	Attempt 2	less than 1 minute	4 out of 4
LATEST	Attempt 2	less than 1 minute	4 out of 4
	Attempt 1	22 minutes	3.5 out of 4

 Correct answers are hidden.

Score for this attempt: **4** out of 4
Submitted Jan 17 at 7:40pm
This attempt took less than 1 minute.

Question 1

0.5 / 0.5 pts

What is the optimal value of $\min_{x \geq 0} 1 + x^2$.

☐ infinity

☐ 0

☒ 1

☐ 10

Question 2

0.5 / 0.5 pts

What is $\arg\min_{x \geq 0} 1 + x^2$.

☐ infinity

☐ 10

☐ 1

☒ 0

Question 3

1 / 1 pts

Which of these is true with respect to the step size α in a gradient descent algorithm? Select all that apply.

☐ The smaller the step size α , the faster is the rate of convergence.

☒ The algorithm may diverge if the step size α is too large.

☒ The step size α should be made smaller with each iteration to arrive at the optimal solution.

☐ The rate of convergence does not depend on the step size α .

Question 4

1 / 1 pts

Which of these is true with respect to linear regression? Check all that apply.

☒ Linear regression is a supervised learning algorithm.

☐ Linear regression is an unsupervised learning algorithm



Least squares can be used to determine the optimum values of the parameters of the fitting line.



Gradient Descent cannot be used to determine the optimum values of the parameters of the fitting line.

Question 5**1 / 1 pts**

Consider the following optimization problem,

$$\min_{x \in \mathbb{R}^3} x_1^2 + 2x_2^2 + 5x_3^2 \quad \text{subject to} \quad h(x) = x_1 + x_2 + x_3 - 2 = 0.$$

Use Lagrange multiplier theory to find λ^* .

Warning: This question will take some time to solve.

☐ 40/17

☒ -40/17

☐ -30/17

☐ 30/17

Quiz Score: **4** out of 4