

# 622 Quiz



This Quiz Will Be Submitted In Thirty Minutes



⚠ This is a preview of the published version of the quiz

Started: Jan 20 at 5:33pm

## Quiz Instructions

This quiz will cover gradient descent. Questions are set up as essays so you can type your answer and upload images if you need. The quiz should take no more than 10 minutes. But you have 30 minutes to complete the quiz once you have started.

### Question 1

**8 pts**

Perform gradient descent on the following function. We want to update  $x$ . Start at  $x = 2$ . Use a learning rate of  $\eta = 0.1$ . Perform three updates only. What is the final value for  $x$ ?

$$f(x) = 2x^3 - x$$

### Question 2

**2 pts**

Using the same function from Question 1, if we ran gradient descent to convergence, what would be the value of  $x$ ? You DO NOT need to run gradient descent to convergence to answer this question. So please do not do that to answer this question. Explain your reasoning behind your answer.

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