

Q1-1: Which generally is NOT a supervised learning task?

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2. Email spam detection
3. Handwriting recognition
4. Eigenvalue calculation

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4. **Eigenvalue calculation**



**Eigenvalue calculation is a mathematical problem, and we do not have any labels for this problem.**

Q2-1: Which is a NOMINAL feature introduced in the lecture?

1. Cost  $\in [0, 100]$
2. Awarded  $\in \{\text{True}, \text{False}\}$
3. Steak  $\in \{\text{Rare}, \text{Medium Rare}, \text{Medium}, \text{Medium Well}, \text{Well Done}\}$
4. Attitude  $\in \{\text{strongly disagree}, \text{disagree}, \text{neutral}, \text{agree}, \text{strongly agree}\}$

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## Q2-2: What is the dimension of the feature space?

The CIFAR-10 dataset contains 60,000 32x32 **color** images in 10 different classes.  
(convert each data to a vector)

1. 10
2. 60,000
3. 3072
4. 1024

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**Every color image has 3 channels (RGB) and  $32*32$  pixels, so the dimension is  $3*32*32=3072$ .**

Q2-3: Are these statements true or false?

(A) Instances from time series are independent and identically distributed.

(B) The primary objective of supervised learning is to find a model that achieves the highest accuracy on the training data.

1. True, True
2. True, False
3. False, True
4. False, False

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3. False, True

4. False, False



**(A) Instances from time series usually have dependencies on the previous instances.**

**(B) The primary objective of supervised learning is to find a model that generalizes.**