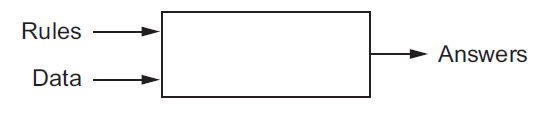
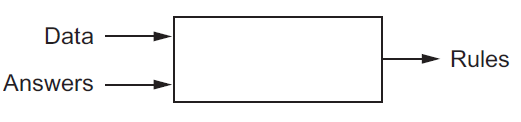
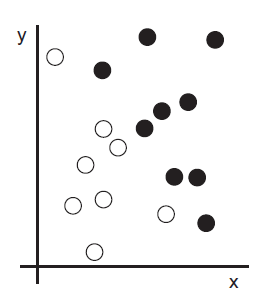
**Chapter 1 Quiz**

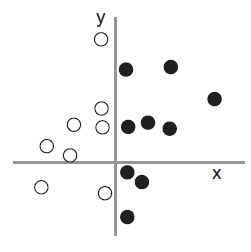
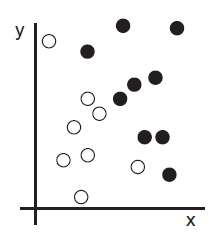
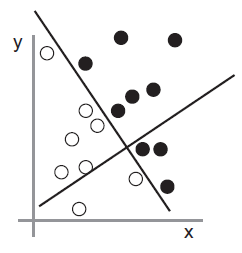
*What is deep learning?*

1. Place ‘*classical programming*’ and ‘*machine learning*’ in the correct empty boxes?
   1. 
   2. 
2. Is a machine-learning system explicitly programmed? (True or False)
3. Who is considered the pioneer of AI and what year was his landmark paper “Computing Machinery and Intelligence” published?
   1. Alan Greenspan 1955
   2. Bill Gates 1985
   3. Alan Turing 1950
   4. Alan Turing 1980
4. When is machine learning more efficient than Bayesian analysis?
   1. Large and complex datasets
   2. Classical statistical analysis
   3. Understanding linear algebra
   4. Binomial inefficiencies
5. Put the following deep learning steps in order.
   1. Examples of the expected output
   2. A way to measure whether the algorithm is doing a good job
   3. Input data points

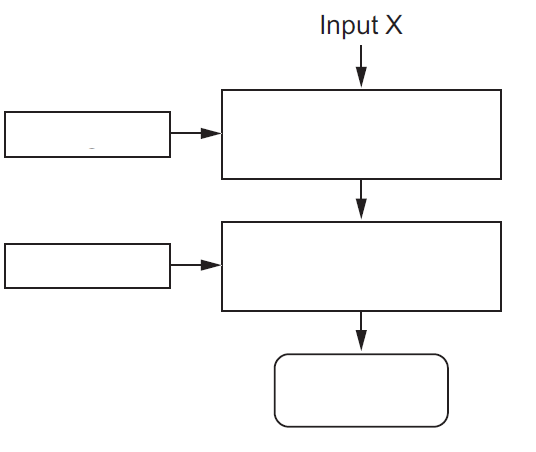
\_\_\_, \_\_\_, \_\_\_

1. Please select the best way to represent the sample data



* 1. 
  2. 
  3. 
  4. None

1. What is “*learning*” in machine learning?
   1. A process to create methods of solutions
   2. An automatic search process for better representations
   3. To create new data points
   4. A search to find outliers in data sets
2. What is a ‘hypothesis space’?
   1. A predefined set of hypotheses
   2. An area on a plane
   3. Space to write down hypotheses
   4. Hypotheses on a plane
3. What are neural networks?
   1. Networks on an electrical grid
   2. Networks that connecting a robotic limb
   3. Layered representations in deep learning
   4. Connected dots on a neural axis
4. What is the difference between shallow learning and deep learning?
5. How is deep learning like a water filter?
6. Fill in the empty boxes with the following words.



Weights Layer (data transformation) Layer (data transformation)

Predictions Y’ Weights

1. Explain how “transformation implemented by a layer is parameterized by its weights”.
2. What computes the error of the prediction to the ‘true target’? Why is this important? What is this iteration called?
3. Deep learning is the best tool to solve most if not all problems. (True or False). Why?
4. How does a support vector machine (SVM) solve classification problems?
5. What are the difficulties in using SVMs?
   1. hard to scale
   2. do not provide good results for perceptual problems
   3. shallow method
   4. uses feature engineering
   5. All the above
6. What is a kernel function?
7. What does deep learning automate that is a crucial step in a machine-learning workflow?
8. What is joint feature learning?
9. What are the two essential characteristics of how deep learning learns from data?
10. What are the 3 technical forces driving advances in machine learning?
11. How are GPU developments and deep learning related?
12. What is a TPU?
13. What are the categories of properties that make deep learning a viable long-term option?