

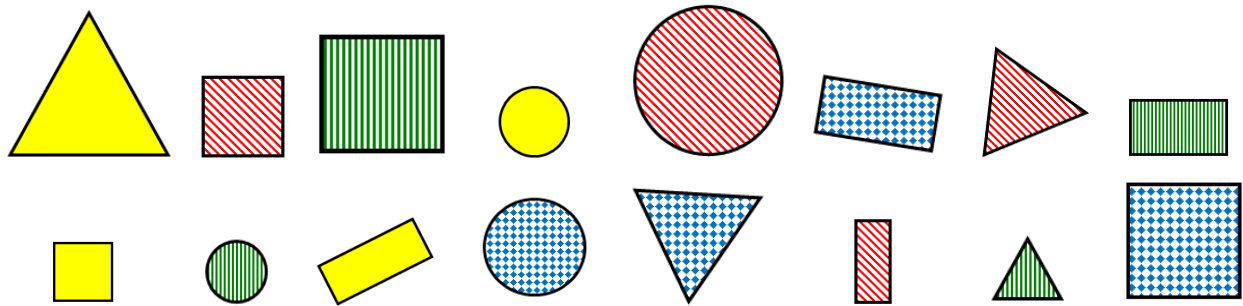
## Classification and Clustering

### Start-up Survey

#### Instructions

Try to answer the following questions as best as you can. Guessing is okay, and it is also acceptable to answer "I don't know."

1. Describe the steps needed to put these shapes into two equal-sized groups.



2. What do you think the difference is between the terms Classification and Clustering?
3. Explain whether you think Classification or Clustering is harder and why.

## Classification and Clustering

### Test Your Knowledge

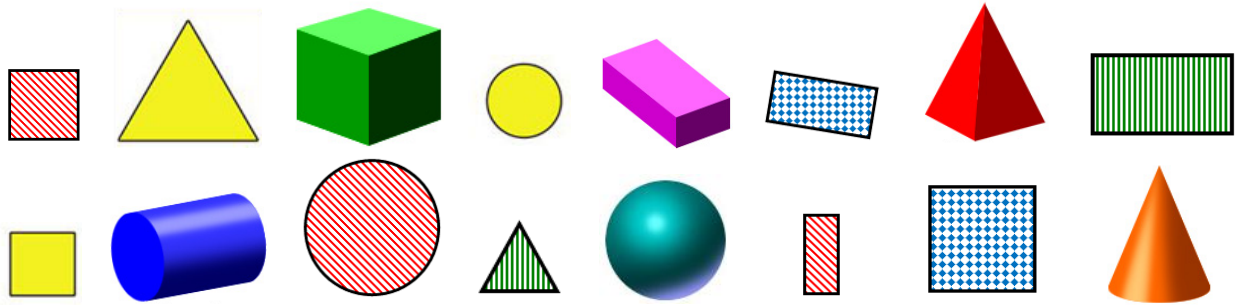
**Circle the letter** in front of the single best answer for each question.

1. When a computer program exhibits what appears to be human-like intelligence, it is probably using an approach known as:
  - A Electronic thought
  - B Digital mimicry
  - C Intelligent learning
  - D Artificial intelligence
2. Specific examples of Machine Learning where a computer is able to improve its own performance over time include:
  - A Performing millions of mathematical computations per second and drawing impressive 3D gaming graphics
  - B Filtering out spam email messages and converting handwriting into computer text
  - C Turning on a computer screen saver after a period of inactivity and automatically dimming a cell phone screen in low-light situations
  - D Finding the shortest route home on your GPS device and analyzing paint samples to get a perfect color match
3. Classification and clustering are which of these types of machine learning?
  - A Supervised and unsupervised learning
  - B Categorized and de-categorized learning
  - C Repetitive and experiential learning
  - D Filtered and identified learning
4. Which one of the following everyday situations is the most like Classification?
  - A Forming teams when the captains don't know any of the players
  - B Figuring out where to sit during lunchtime in a high school cafeteria
  - C Deciding whether to pay using cash or credit
  - D Reorganizing an accidentally dumped-out box of 64 crayons
5. What can make Clustering more difficult than Classification?
  - A Not knowing the class labels ahead of time
  - B Doing lots of comparisons until you finally find the best clusters
  - C Dealing with items that don't seem to fit well into any cluster
  - D All of the above

## Classification and Clustering

Answer the following questions.

6. Describe the steps needed to put these shapes into two equal-sized groups?



7. What is the difference between the terms Classification and Clustering?

8. Explain whether Classification or Clustering is harder and why.