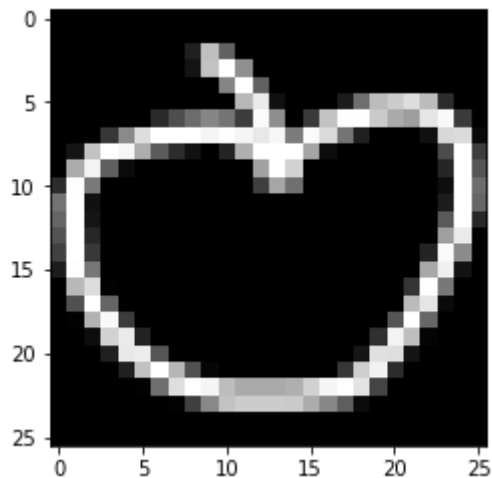


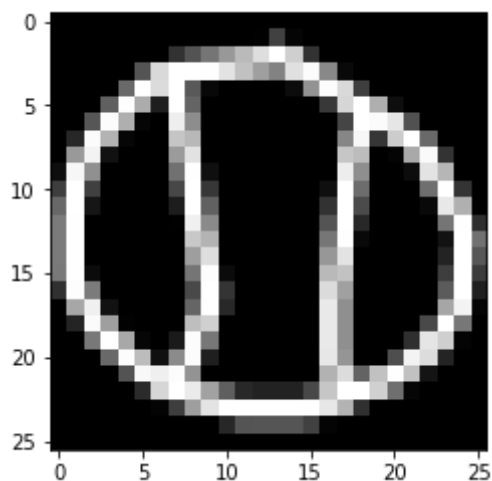
```
In [1]: 1 %matplotlib inline
        2 import matplotlib.pyplot as plt
        3 import numpy as np
```

```
In [2]: 1 # load the image and labels
        2 images = np.load("./cs475_project_data/images.npy")
        3 labels = np.load("./cs475_project_data/labels.npy")
```

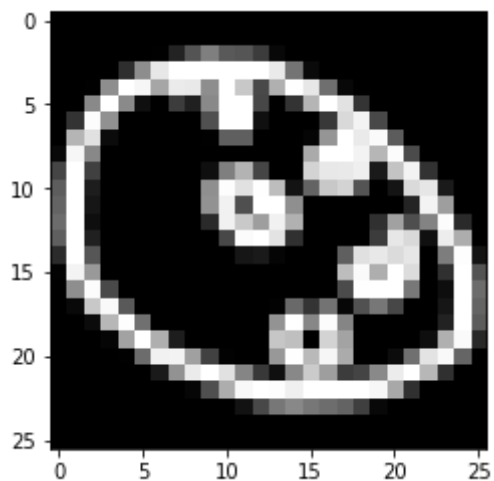
```
In [78]: 1 # separate out class 0 and visualize the first image
        2 class_0_images = images[labels == 0]
        3 plt.imshow(class_0_images[0])
        4 plt.set_cmap('gray')
```



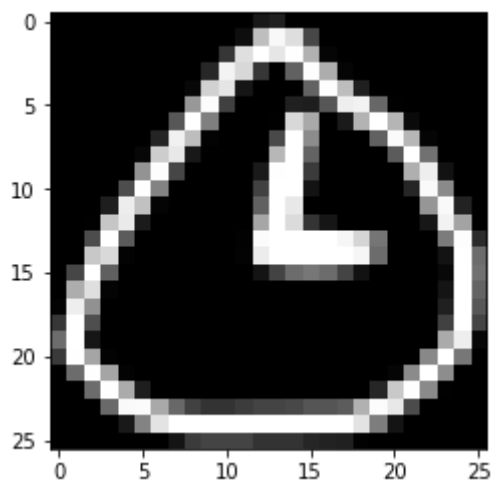
```
In [9]: 1 # for class 1
        2 class_1_images = images[labels == 1]
        3 plt.imshow(class_1_images[0])
        4 plt.set_cmap('gray')
```



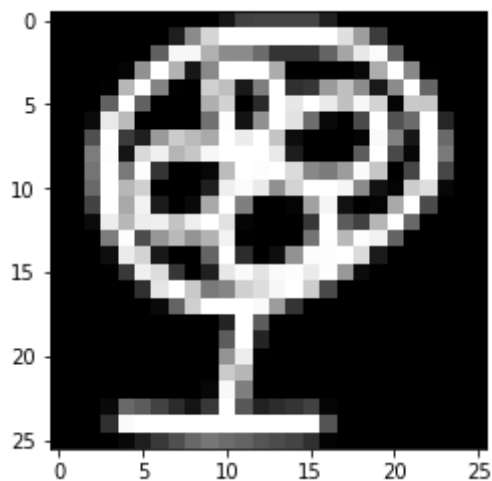
```
In [13]: 1 # for class 2  
2 class_2_images = images[labels == 2]  
3 plt.imshow(class_2_images[0])  
4 plt.set_cmap('gray')
```



```
In [15]: 1 # for class 3  
2 class_3_images = images[labels == 3]  
3 plt.imshow(class_3_images[0])  
4 plt.set_cmap('gray')
```



```
In [16]: 1 # for class 4
          2 class_4_images = images[labels == 4]
          3 plt.imshow(class_4_images[0])
          4 plt.set_cmap('gray')
```



Q: Which integer is associated with the apple class? The baseball class? The clock class? The fan class?

A: class 0, 1, 3 and 4

```

In [76]: 1 # Reshape the images data array from (num_images, height, width) to (num
2         input = images.copy()
3         num_imgs, height, width = input.shape
4         input = input.reshape(num_imgs, height*width) # shape each image to a vector
5         print(input.shape) # new shape of the images
6
7         # print the firsts 5 flattened vectors (the first 5 images) with plt.plot
8         for i in range(0, 5):
9             plt.figure(figsize=(20,6))
10            plt.plot(input[i], 'r')

```

(50000, 676)

