

For the potential issue may happen due to the lack of handling exceptions and missing values, we added more codes in the questions 4,7 and 8. To exclude the situation that were mentioned by you that might happen. From the Output for the modified codes, it seems that the missing values from data lead to value error on questions 8 and here is our updated codes and outputs for the three questions:

Q4.

```
female = len(data[data['Gender'] == 'Female'])  
male = len(data[data['Gender'] == 'Male'])
```

```
if male == 0:
```

```
    a4 = "Undefined (No male customers)"
```

```
else:
```

```
    a4 = round(female / male, 3)
```

```
print(f"Ratio of Female to Male customers: {a4}")
```

Q7.

```
usage_data = data['Usage'].dropna()
```

```
if len(usage_data) == 0:
```

```
    a7 = "Undefined (No usage data available)"
```

```
else:
```

```
    a7 = round(float(usage_data.mean()), 3)
```

```
print(f"Average number of days per week customers use their treadmill: {a7}")
```

Q8.

```
clean_data = data.dropna(subset=['Fitness'])
```

```
excellent_count = len(clean_data[clean_data['Fitness'] == 5])
```

```
total_count = len(clean_data)
```

```
if total_count == 0:
```

```
    a8 = "Undefined (No valid data for Fitness rating)"
```

```
else:
```

```
    a8 = round((excellent_count / total_count) * 100, 3)
```

```
print(f"Percentage of customers rated as 'Excellent' in health: {a8}%")
```

Output from Jupyter Notebook:



```
▼ # Test your class. For example run:  
▼ for question, answer in answers.items():  
    print(f"Answer to Question {question}: {answer}")
```

executed in 4ms, finished 14:57:06 2024-12-11

```
Answer to Question 1: 180  
Answer to Question 2: 3  
Answer to Question 3: 32  
Answer to Question 4: 0.731  
Answer to Question 5: 16.0  
Answer to Question 6: 107  
Answer to Question 7: 3.456  
Answer to Question 8: 17.222  
Answer to Question 9: 104581  
Answer to Question 10: 28
```