## Question 1

## Techniques

At a gym there are three different paths an individual can take to obtaining membership. The first option is personal training. The second option is group fitness classes and the last option is individual direction. Members are only allowed to partake in individual direction after 5 personal training sessions and 10 group fitness classes.

## Personnel

For personal training, there must be one trainer per individual. For group fitness classes there must be one trainer per eight individuals. For individual direction, no trainer is required; however, only 25 members can partake in individual direction at a time. At this particular gym there are 12 trainers.

## Price

The price of membership depends on the technique the individual chooses. Personal training costs between $\$ 40$ and $\$ 75$ per session, depending on the trainer. Group fitness classes cost $\$ 20$ per session. Individual direction costs $\$ 15$ per visit.

Based on the given information, determine whether each of the statements is justified.
I. An individual who is experienced in fitness and has taken 3 group classes can choose to pay for the individual direction membership.
II. An individual who has a budget of $\$ 160$ a month to spend on fitness after going through the personal training and group sessions can attend 8 classes per month.
III. Tina has completed all the necessary requirements to have an individual direction membership; Tina would make the 26th member of this type.

Possible Answers:
I. Not justified
II. Not Justified
III. Justified
I. Justified
II. Justified
III. Not justified
I. Justified
II. Not Justified
III. Not justified
I. Not justified
II. Justified
III. Not justified
I. Not justified
II. Justified
III. Justified

## Question 2

Type of Art
Pointillism is a type of art that is created by drawing numerous dots on paper. Watercolor paintings are created by combining paint and water to create different shades. Pottery is made by molding clay.

Time to Create a Piece
A pointillism piece that has dimensions of $12 \times 18$ takes on average 15 hours to create. A watercolor painting that is $17 \times 23$ takes on average 20 hours to create. A piece of pottery that has dimensions $6 \times 2 \times 4$ takes 12 hours to create.

## Exposition

An art school is holding an exposition to highlight their student artists. The school will commission their students to create new works of art specifically for the exposition. The exposition requires one-third of the artwork displayed to be watercolor paintings and one-fifth to be pottery pieces.

Based on the given information, determine whether each of the statements is justified.
I. There are 20 watercolor paintings, 12 pottery pieces, and 28 pointillism pieces in the art exposition.
II. Students that will be featured in the school's exposition require no more than one day's notice.
II. Timothy is known for his watercolor pieces and is expected to paint 4 for the school's exposition. Timothy can create all the pieces over the weekend (Saturday and Sunday).

Possible Answers:
I. Justified
II. Justified
III. Not Justified
I. Justified
II. Not justified
III. Not justified
I. Not Justified
II. Justified
III. Not justified
I. Justified
II. Not justified
III. Justified
I. Not justified
II. Justified
III. Justified

## Question 3

## Tab 1



In the mosquito-repellent product category, there are five major companies in the retail business. The pie chart represents company-wide sales volume distribution of mosquitorepellent products.


## Tab 2



The table below presents the region-wise and product-wise sales volume distribution of the Apex Corporation.

| Products | North | South | East | West | Total |
| :--- | ---: | ---: | ---: | ---: | ---: |
| Mosquito Repellent Coil | 124 | 140 | 106 | 50 | 420 |
| Mosquito Repellent Refill | 100 | 110 | 90 | 70 | 370 |
| Mosquito Repellent Cream | 46 | 140 | 98 | 6 | 290 |
| Mosquito Repellent Gel | 24 | 98 | 32 | 16 | 170 |
| Total | 294 | 488 | 326 | 142 | 1,250 |

Unit: '000 cartons

## Tab 3




For each of the following statements, select "Yes" if the statement is true based on the information provided; otherwise select "No."

|  | Yes No |  |
| :--- | :---: | :---: | :--- |
| A | The difference between the sales volume of Austere |  |
| B | $\bigcirc$ | Corporation and Pedro Corporation is more than 1,250,000 <br> cartons. |
| C | For the Apex Corporation, sales revenue from the Eastern <br> region is more than that from the Northern region. <br> For the Apex Corporation, sales revenue from Mosquito Coil <br> is more than that from Mosquito Refill. |  |

