Question 1:

Does a new supplement help people sleep better?

Ans:

Sample:

A group of people - may be in hundreds or thousands.

Measured variable:

We split the people into two groups. Each group having people of approximately, the same number, gender distribution, age distribution, similar health condition, following similar routines for being active etc.

Two versions:

Our control version will get a placebo and the test version will get the real supplement.

Our hypothesis:

A new supplement will increase the percentage of sleep time or quality (sound sleep, deep sleep or light sleep)

Outcome:

The key metric is then finding the quality or duration of sleep.

The users will be required to maintain the details of all activity, like when they started taking the supplement, the sleep pattern (may be time when they go to bed, how much time it took to fall asleep, is there any break in between etc.)

When the measured variables are same, but the test version shows better result, we can agree with the hypothesis.

Question 2:

Will new uniforms help a gym's business?

Ans:

Sample:

Let’s consider two gyms x and y. The sample would be the people (may be in hundreds or thousands) who are using any of these two gyms.

Measured variable:

The two gyms in interest - let’s say are at similar locality, providing similar facilities, similar popularity and producing similar incomes.

The people going to these gyms should be of approximately the same number, gender distribution, age distribution, similar health condition, following similar routines for being active etc.

Two versions:

The control version will be one gym say x, which will not provide new uniform to the staff.

The test version, will be gym y, which will provide a new uniform to the staff.

Our hypothesis:

The hypothesis is that the test version (gym y) will see increase in subscriptions than the control version (gym x).

Outcome:

Subscriptions count change will be the key metric.

When people going to the gym x and gym y are measured against similar measured variable, but subscription are more in gym y, then we have to agree with the hypothesis.

Question 3:

Will a new homepage improve my online exotic pet rental business?

Ans:

Sample:

A group of people - may be in hundreds or thousands.

Measured variable:

We randomize the people in order to split them into two groups with both group having approximately, the same number, gender distribution, age distribution, or similar interest in pet renting.

Two versions:

The control version will be the website visitors, who see the old version. The test version will be the website visitors, who see the new version.

Our hypothesis:

The rentals per homepage visit will increase when I deploy my new homepage.

Outcome:

Change in rentals per homepage visit will be my key metric.

Question 4:

If I put 'please read' in the email subject will more people read my emails?

Ans:

Sample:

The people to whom the emails would be sent

Measured variable:

Both groups of people should be similar when compared to parameters like acquaintance with the sender, subject of interest of receiver, receiver’s age appropriate content or not etc.

Two versions:

Control version will be people, to whom emails would be sent without 'please read' in the subject. Test version will be people, to whom emails would be sent with 'please read' in the subject.

Our hypothesis:

If I put 'please read' in the email subject more people will read my emails.

Outcome:

Compare the counts for both the groups of people with same measured variable.

*(Not sure how to know if people read the email or not –*

*Case1 - the emails ask the reader to answer a yes/no question – Then count the number of yes or no*

*Case2 - after the receiver opens the email it automatically shoots a notification to the sender- then count the number of notifications vs the number of emails sent.)*