

Name: _____ Date: _____ Core _____

SpongeBob Squarepants - variables Part 1

Patty Power



Mr. Krabbs wants to make Bikini Bottom a nicer place to live. He has created a new sauce that he thinks will reduce the production of body gas associated with eating krabby patties from the Krusty Krab. He recruits 100 customers with a history of gas problems. He has 50 of them eat krabby patties with the new sauce. The other 50 eat krabby patties with a fake sauce that looks just like new sauce but is really just a mixture of mayonnaise and food coloring. Both groups were told that they were getting the sauce that would reduce gas production. Two hours after eating the krabby patties, 30 customers who ate the new sauce reported having fewer gas problems and 8 customers who had the fake sauce reported having fewer gas problems.

Which people are in the control group: _____

Dependent Variable: _____

Independent Variable: _____

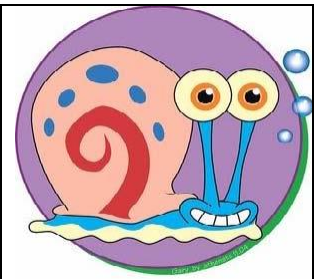
Constants: _____

What should Mr. Krabbs's conclusion be? _____

Why do you think 8 people from group B reported feeling better? _____

Slimotosis

SpongeBob notices that his pal Gary is suffering from slimotosis, which occurs when the shell develops a nasty slime and gives off a horrible odor. His friend Patrick tells him that rubbing seaweed on the shell is the perfect cure, while Sandy says that drinking Dr. Kelp will be a better cure. SpongeBob decides to test this cure by rubbing Gary with seaweed and having him drink Dr. Kelp at the same time for 1 week. After a week of treatment, the slime is gone and Gary's shell smells better.



Dependent Variable: _____

Independent Variable: _____

Constants: _____

What's wrong with the experiment? _____

What could SpongeBob do to make this a controlled experiment? _____

Microwave Miracle

Patrick believes that fish that eat food exposed to microwaves will become smarter and would be able to swim through a maze faster. He decides to perform an experiment by placing fish food in a microwave for 20 seconds. He first has the fish swim through a maze and records the original time it takes for each one to make it to the end. He then feeds the special food to 10 fish and gives regular food to 10 others. After 1 week, he has the fish all swim through the maze again and records the times for each.



Hypothesis: _____

Control Group: _____

Dependent Variable: _____

Independent Variable: _____

Constants: _____

Special Food Group
(Time in minutes/seconds)

Fish	Before	After
1	1:06	1:00
2	1:54	1:20
3	2:04	1:57
4	2:15	2:20
5	1:27	1:20
6	1:45	1:40
7	1:00	1:15
8	1:28	1:26
9	1:09	1:00
10	2:00	1:43

Regular Food Group
(Time in minutes/seconds)

Fish	Before	After
1	1:09	1:08
2	1:45	1:30
3	2:00	2:05
4	1:30	1:23
5	1:28	1:24
6	2:09	2:00
7	1:25	1:19
8	1:00	1:15
9	2:04	1:57
10	1:34	1:30

Look at the charts. What should Patrick's conclusion be? _____

Marshmallow Muscles



Larry was told that a certain muscle cream was the newest best thing on the market and claims to double a person's muscle power when used as part of a muscle-building workout. Interested in this product, he buys the special muscle cream and recruits Patrick and SpongeBob to help him with an experiment. Larry develops a special marshmallow weight-lifting program for Patrick and SpongeBob. He meets them once every day for a period of 2 weeks and keeps track of the amount of weight they can lift. Before each session, Patrick's arms and back are lathered with the muscle cream, while SpongeBob's arms and back are lathered with a regular lotion. After two weeks, Patrick was able to lift 15 more pounds (lbs) and SpongeBob was able to lift 12 more pounds (lbs).

Control Group: _____

Dependent Variable: _____

Independent Variable: _____

Constants: _____

What should Larry's conclusion be?

The effects of the Marshmallow Weight- lifting program over time		
Time	Patrick	SpongeBob
Initial weight	18 lbs	5 lbs
After 1 week	24 lbs	9 lbs
After 2 weeks	33 lbs	17 lbs
increase in Weight lifted	15 lbs	12 lbs