

Good example of essay on answers to questions

[Science](#)



The scientific method is a general process by which all scientists gain knowledge by considering questions in a methodical way. There are five general steps to this process.

The first step of the scientific method involves observing phenomena. In other words, the scientist has to decide what it is he wants to know. This requires him to observe the world around him, and to focus in on his particular area of interest.

The second step in the scientific method involves creating a hypothesis, which essentially addresses the topic in which the scientist is interested and about which he has made observations. The hypothesis poses a question about this topic, and it proposes an answer to that question. Sometimes the hypothesis is informally referred to as “an educated guess,” because the answer to the question is not yet known, but it can be proposed because of the information that already is known. A hypothesis must be able to be tested: the scientist himself, and others who come after him to approach the same question, must be able to try out the proposed answer in an attempt to determine whether or not it is valid. In order to test the hypothesis, the outcomes must be observable, describable, and measurable. Because of these requirements, the hypothesis must be stated factually, without interpretation or bias.

The third step in the scientific method is to actually collect data about the hypothesis. An experiment or experiments must be created to test out the proposed answer to the question being asked. The information collected can be qualitative (based on observations) or quantitative (based on precise measurements). Every variable in an experiment must be under the scientist's control. Independent variables are those conditions that can be

<https://assignbuster.com/good-example-of-essay-on-answers-to-questions/>

manipulated or changed; the dependent or response variables are the effects of those changes. A control group/specimen must be maintained as well, and the changes observed as a result of manipulating the various variables can then be compared to the control. Accuracy and clarity of measurements is critical in this data collection step.

The fourth step in the scientific method involves manipulating and analyzing the data that has been collected. This can involve converting measurements into like units, creating charts or graphs or illustrations, or otherwise making meaning out of the data that has been collected.

The final step in the scientific method is reporting of the conclusions of the study based on the evidence collected. This requires the scientist to think about what he has observed and then draw logical conclusions about it.

Ideally, because a hypothesis is repeatable, the conclusions should be compared with those of other scientists to determine if they agree or, if not, why they do not agree.

1. $\text{range} = 94 - 64 = 50$ beats per minute

Mean = $(64 + 70 + 82 + 94 + 85 + 75 + 72 + 78) / 8 = 620/8 = 77.5$ beats per minute

2. $38 = 3800\%$

3.. $75 = 75\%$

4. $1.6 = 160\%$

5. $800\% = 8$

6. $0.05\% = 0.0005$

7. 10 breaths per minute

8. between 100 and 102 degrees F