socrative by MasteryConnect

Note that in questions 1-5, there are no correct answers. The questions are exploring your beliefs.

Testnaam: PhoEng:Sc 2015-2016 What do we determine in experimental research

Datum: 12/08/2015

Totaalaantal vragen: 5

Vraag met de meeste juiste antwoorden:

Vraag met de minste juiste antwoorden:

1. Is Boyle's / Hooke's / Ohm's law – which is derived by means of inductive reasoning – an explanation (of, e.g., why the pressure goes up when the volume is decreased)? Yes [True] / No [False]

24/43 A True
12/43 B False

2. Does Euclid's geometry (Euclids axioms) explain why the door (with W=D) does not fit in the cabinet. [Or, Does model derived from Euclid's geometry explain why the door (with W=D) does not fit in the cabinet.]
Yes [True] / No [False]

37/43 A True
4/43 B False

3. Do Newton's laws explain why the moon (or the bullet) has its specific (observed) trajectory?

22/43 A True
18/43 B False

4. Does a scientific explanation (e.g. the law of nature) **explain** because it **describes the cause** of the observed phenomenon? Yes [True] / No [False]

12/43 A True
28/43 B False

5. Do you consider your own idea about laws of nature closer to Realism or anti-Realism? [Explanation to this question: a realist (according to Van Fraassen who is an anti-realist) believes that theories are literal, true stories or picture of how 'the world behind the phenomena' is => what would the law describe according to the realist? Conversely, if you are more inclined towards an anti-realist position => what would the law [e.g. PV(at constant T) is constant] describe according to the anti-realist?]

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Laws describe only our observations; we cannot say whether this is how the world actually is.

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I'm closer to realism. If I'm not it is not useful to study engineering that is based on theories.

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Keep it real

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realist

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Closer to realism

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Don’t know

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Realist, most of the current scientific knowledge cannot be explained by just 'observable' phenomenon

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Closer to realism:
Realist: A law of nature explains and describes a certain phenomenon.
Anti-realist: A law of nature describes a phenomenon, but cannot be used to explain something

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Realist, we dont just want to know what is going to happen, but especially why something is going to happen

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Realist, laws of nature describe and therefore explain what happens in the world. We can work with these laws and build New theories on them until they are proven to be false

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Anti-realism. According to the anti-realist such a law describe the world as we can observe it. What the law says doesn't necessary reflect on the 'real world'. It just describes/explains how the world we can observe works. I even wonder if it is useful at all to think about the 'real world' which we never can observe/experience, because we are human.

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Closer to anti-realism, a law of nature describes a model which we can use to make predictions about observable phenomena. In themselves they are not true per se

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The laws are closer to realism than to anti-realism, it is just very convenient to describe everything as if it exists

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I believe laws of nature are closer to reality. They are the closest tool we have to explain nature and its different phenomena. Nevertheless, they don't always explain the reason why something happens or is that way, they merely describe what's happening rather than explain why does it happen.

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closer to realism.

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anti-realist. the law is the most likely explanation of the unobservable

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Closer to realism.

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My own idea about laws of nature is closer to a realism because I do not doubt a theory.

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Realist; laws describe the unobservable world to a degree of precision. An infinite amount of laws would be needed if it is described 100% precise

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More towards anti-realism. Most laws describe a good approximation of reality. Most situations in which the law hold are theoretical, Reality cannot be put in a theoretical framework and therefore the laws are only an approximation of reality.

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Anti-realist: A law of nature describes what is observable using a theory which is assumed not to be false but is not necessarily believed in.

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Anti-realist, the laws only describe an observed relation, not an explanation of why these phenomena happen or how they work exactly. The relation between P and V is observed but does not explain why P and V interact in that way.

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I would be more an anti-realist. I think that theories are subjected to change also models or pictures may be subjected to change in the future. (don't need to be true perse). In regards to Hooke's law this is a schematically overview of the reality and that's about it.

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Realism: I think that physics can be described by formulas which cannot be observed. Gravity is an unobsevable thing and I believe in this kind of thing.

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It is more close to anti-realism, as they are not connected with the basic things, which we experience in our day today lives.

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I would say closer to anti-realism: a "scientific theory" can describe a phenomenon as close to the truth for us (Ding-für-mich), but it doesn't give absolute true statements about what is happening.