

1. IQ and "g"

Check whether the statements regarding the Intelligence Quotient and the general Factor "g" are true or false.

1. The IQ can be used to compare individuals in similar social and cultural environments.
 - true
 - false
2. It is possible to increase the IQ by training.
 - true
 - false
3. A high IQ score is a necessary condition for professional success.
 - true
 - false
4. Because emotional intelligence is not important, most leaders of companies are men.
 - true
 - false
5. All people are born with equal abilities and the same IQ. Different IQs are the result of different social and cultural environments.
 - true
 - false
6. While high IQ scores do not necessarily imply professional success, they are a relatively good predictor of whether students will be able to finish their university degrees.
 - true
 - false
7. The IQ is a good measure to estimate a person's professional success.
 - true
 - false
8. The general intelligence factor "g" is the same as the IQ.
 - true
 - false
9. Using modern brain imaging techniques, the existence of a general intelligence factor "g" has been clearly demonstrated.
 - true
 - false
10. In IQ tests, only 3 forms of intelligence (fluid, crystal, speed) are tested.
 - true
 - false

2. Turing Test and Chinese Room

Check whether the statements are true or false.

1. In the original Turing Test, the machine has to find out who is the man and who is the woman.

- true
- false

2. In the "Total Turing Test", the judge can not only hear but also see the subject.

- true
- false

3. The Turing Test makes no assumptions about the internal mechanisms.

- true
- false

4. The "Chinese Room Experiment" is a replacement for the "Turing Test".

- true
- false

5. According to Searle, "strong AI" claims that in order to understand how the mind works, we need to know how the brain works.

- true
- false

6. Searle states that intentionality is a biological phenomenon.

- true
- false

7. The "dualist view" which goes back to René Descartes, states that there is a mental world and a physical world.

- true
- false

3. Miscellaneous

Brain imaging techniques are widely used in brain and intelligence research — we didn't have time to discuss the various methods in the lectures, but it is important to know the basics about them. You may have to consult the Internet for some of the questions because the material is not always covered in the textbook.

Please check again whether the statements are true or false.

1. fMRI is based on the widely held assumption that increased neural activity is correlated with changes in blood flow and blood oxygenation.

- true
- false

2. fMRI has high spatial resolution, but poor temporal resolution.

- true
- false

3. EEG has a high temporal resolution but low spatial resolution.

- true
- false

4. The “homunculus problem” refers to accounts of psychological processes (e.g. visual perception) that are circular in the sense that they ascribe to some internal processes the very properties they attempt to explain.

- true
- false

5. In order to pass the Turing Test, the machine has to be conscious.

- true
- false

6. Scientists believe that homunculus is responsible with orchestrating the activities taking place in our brain.

- true
- false

7. People missing a limb are found to feel their limb alive, sensing and moving as if it was real. The explanation of this phenomenon resides in the reorganization of nerves in the brain. Nerves from neighbor sensory areas take over the brain area which is no longer stimulated due to disrupted sensory pathways from the missing limb. Therefore, whenever the neighbor area is stimulated, the missing limb is also “stimulated”. This phenomenon represents a proof of how sensory input projects our body image in the brain.

- true
- false

8. The Flynn effect states that there is a high correlation between IQ test results in language-oriented tasks and mathematical tasks.

- true
- false

9. The “dualist view” has created the famous-infamous “mind-body problem” which is essentially about the relation between the mind and the body, in particular the brain.

- true
- false