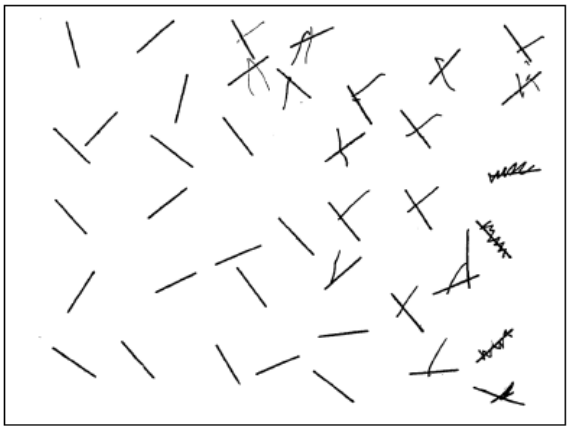
These questions need to be replied by Monday April 6 at 6 pm.

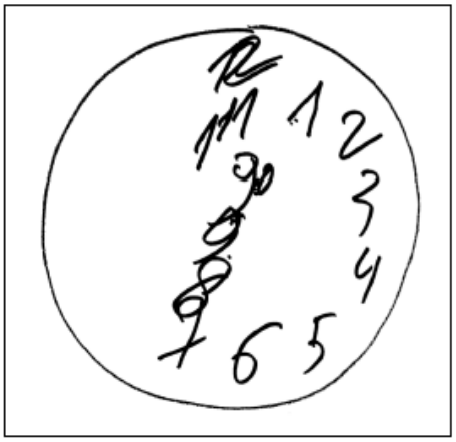
Work individually. There are no restrictions or requirements in the length of your reply.

This is a test on "creativity in engineering applied to rehabilitation".

Questions

1) Hemispatial neglect is a symptom often observed in Traumatic Brain Injuries and, sometimes, stroke. It consists in a deficit in attention and awareness in one side of the field of vision. The person can see in that side of the space but has problem "noticing" it. Neglect is most closely related to damage to the temporo-parietal junction and posterior parietal cortex. Design a technology that can help to put in numbers the severity of spatial neglect. Your technology should help deliver a test for neglect that will put the severity of the problem in numbers. Specifically, we are interested in understanding which % of the left visual field is neglected. You can get inspiration from literature, proposing improvements to systems that have been presented in papers.





2) Max is a graphical artist, he prepares his works using software through different interfaces (e.g. mouse, trackpad, tablet). He has been recently diagnosed with Parkinson's disease and has significant postural (static) and kinetic (dynamic) tremor in the hands. The severity of this symptom greatly impairs his ability to carry out his job. Come up with a solution (hardware or software) to limit the impact that tremor has on his work. Provide a brief explanation of the solution you propose (e.g. a design if it is hardware).