# 1

1. Internal – every design element, including lexicon, is used consistently within the product, however many times it is used. For example, having the same kind of ruler at top and side of Word.   
   External – design elements are consistent with other, similar, applications to satisfy user expectations coming from using the others. E.g., command CTRL+Z undoes an action, like the standard in other applications.
2. Size, colour
3. Proximity – distance between design elements. Scale – relative size of design elements.
4. ---
5. Affordance – relationship between object and user. A cash machine affords a person taking money out of it.
6. Physical constraint – a design constraint resulting from limitations of the physical world. E.g., a bank card being put only 1 way

# 2

a) (diagram)

b)   
Biological band – quickest band (100 nanoseconds to 10 milliseconds) describing human perception and reaction, like haptic feedback being sent from nerves to the brain

Cognitive band (100 ms to 10 s) – describing simple tasks, like input with pointing devices, selection techniques, text entry, gestures

Rational band (minutes/hours) – more involved tasks that require making decisions, like web site use

Social band (days/weeks/months) – tasks that require development of social bonds/establishing norms/standards, like online dating

c)

Loudness – quantified by sound pressure level, but perceived subjectively depending on quality of hearing

Pitch – quantified by frequency of sound, perceived as above

# 3

1. IV – latency on soft keyboards. DV – usability of soft keyboards (typing speed and errors)
2. Benefit – participants don’t need to adapt to other type of keyboard, which would skew results otherwise; also, less fatigue. Detriment – one group may be less representative of general population than another group, which cannot be controlled against; also, more participants needed.
3. Issue – same ordering comes with a confounding variable – learning. Solution – randomise/use Latin squares
4. Were you ever frustrated with added latency on a keyboard? **NO!**  
   How frustrating did you find the 50 ms latency keyboards? [Likert scale]
5. Nature of research, to make participants informed about why they are being analysed. Right not to participate/to withdraw, to allow participants to use their rights and not break consent by using information without their approval.