b. Good for making quick decisions when not much information is available

c. Limitations:
   i. You are not examining your reaction rationally
   ii. It is not supported by evidence

5.) Rational Method (“Let me think about that”)
   a. Thinking things through, considering pros and cons, logical reasoning
   b. Results in somewhat reasonable answers
   c. Limitations:
      i. Depends largely on people’s memory and logical reasoning skills, either or both which may be faulty

6.) Empirical Method
   a. From direct experience (“I won’t believe it unless I see it for myself”)
   b. Limitations:
      i. Just because you don’t experience something, doesn’t mean it ceases to exist (ex. I’ve never been to India, but it is still a real country that exists)
      ii. Illusions – can’t always trust your own eyes, illusions can be misleading
      iii. We often misperceive things based on our expectations (i.e. we see what we expect to see)

7.) Scientific Method
   a. 5 steps
      i. Observe behaviour
      ii. Come up with a tentative answer or explanation (a hypothesis)
      iii. Use the hypothesis to generate a testable prediction
      iv. Evaluate the prediction by making systematic, planned observations
      v. Use the observations to support, refute, or modify the original hypothesis

Key Methods of the Scientific Methods
1.) Objective – free of personal beliefs
   a. Experimenter bias: the experimenter’s expectations influence the findings of a study
   b. Rosenthal & Jacobson (1963)

2.) Empirical – objective and systematic observations

3.) Public
   a. Confirmation of findings: others can re-do the study and find the same results (replication)
   b. Allows science to be self-correcting

Pseudoscience (a.k.a. false science)
• A set of beliefs or practices that claim to be scientific, but are really not
• Example: astrology
Scales of Measurement
1.) Nominal Scale
   a. Classification of data into one of two or more categories (e.g. hair colour, political affiliation, gender)
2.) Ordinal Scale
   a. Classification of data into an order or rank of magnitude (e.g. drink sizes)
3.) Interval Scale
   a. Classification of data on a scale that assumes equal distance between numbers (e.g. temperature)
4.) Ratio Scale
   a. Classification of data on a scale that assumes equal distance between numbers and has an absolute zero value (e.g. weight)

Modalities (or types) of Measurement
1.) Self-Report Measures (e.g. questionnaires, surveys, interviews)
   a. Social Desirability Bias: a tendency to respond to questions in a way that will make them look good to the person asking the questions
2.) Physiological Measures: recording of responses within the participant’s body (e.g. GSR, EMG, EEG)
3.) Behavioural Measures: direct observation and recording of behaviours

Other Aspects of Measurement
1.) Sensitivity of the Measure: ability to detect differences among a group of participants
   a. Ceiling Effect: the scores pile up at the high end of the measurement scale because the task was too easy
   b. Floor Effect: the scores pile up at the low end of the measurement scale because the task was too difficult
   c. Range Effects: the clustering of scores at one end of a measurement scale
2.) Reactivity: refers to the tendency for people to alter their behaviour when they know they are being observed
   a. Artifact: an external factor that could influence the validity of the measurement
3.) Demand Characteristics: refers to any clues in the research situation that tend to convey to the participants some idea of what behaviour is expected
   a. Good subject role: the participant tries to give the researcher the result they want
   b. Negativistic subject role (a.k.a. “screw you effect”): the participant produces responses or behaviour that is the opposite direction as they anticipated result
   c. Apprehensive subject role: the participant responds in a socially desirable way rather than truthfully
   d. Faithful subject role: the participant follows the instructions given by the researcher to the letter