1. Variation is everywhere.

2. Some variation can be explained — some cannot. (The data exhibit patterns and deviations from patterns.)

3. You can see a lot just by looking. (Draw a picture.)

4. A small number of observations, carefully made, can provide much knowledge. A large amount of data, carelessly collected, may be worthless. (The sampling procedure is crucial.)

5. Cause and effect cannot normally be established by an observational study. (Beware the lurking variable.)

6. Statistical conclusions are based on models that are always approximate and sometimes just plain wrong.

7. Conclusions are never certain.