1. **A Chance at Monte Carlo Activity —   
   Pre-Quiz Assessment – Answers**

1. List a few ways that engineers use computers and computer programming:

**Engineers harness computers for numerical computation and experimental simulation, among other things. A common pattern of usage is to perform numerical processing to analyze and understand experimental data, followed by simulation to test a predictive hypothesis or model.**

2. In the field of mathematics, what is π (pi)?

**Pi (π) is the ratio of the circumference of a circle to its diameter.**

3. What does it mean to model a phenomenon?

**A model describes a phenomenon in terms of simple parts. For example, the dynamics of a game of pool can be predicted somewhat by the physical model of elastic collisions between objects with varying amounts of mass and energy. The phenomenon has been stripped down to a few simple parts: energy, conservation of energy, and the means of transferring kinetic energy from one massive object to another.**

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| **How do you agree with these statements:** | **Strongly Agree** | **Agree** | **Don't Know** | **Disagree** | **Strongly Disagree** |
| In mathematics, we always calculate exact numbers. |  |  |  |  | **X** |
| Scientists always conduct experiments physically (by hand). |  |  |  |  | **X** |
| Random information can help us solve problems. | **X** |  |  |  |  |
| Computer programming is not useful for scientists. |  |  |  |  | **X** |