

Name: _____ Date: _____

Engineering Design Quiz

- In engineering, the design process begins when...**
 - information about an existing product is gathered by an engineer
 - an engineering design team comes up with ideas for a new product
 - a design engineer recognizes the need for a solution to a problem
- Identifying the “target population” or “target audience” occurs during which step of the engineering design loop?**
 - Identify the Need
 - Research the Problem
 - Develop Possible Solutions
- Engineers must understand the difference between requirements and constraints. Let’s say a team of engineers is asked to design a pair of kids’ tennis shoes for less than \$20. They determine that the only way to manufacture shoes for this price is to use recycled materials. What is the team’s *constraint*?**
 - The shoes must be designed for kids
 - The shoes must be made out of recycled materials
 - The shoes must cost less than \$20 to manufacture
- During a brainstorming session we want to focus *more* on:**
 - quantity of ideas rather than quality
 - quality of ideas rather than quantity
- Which step of the engineering design loop distinguishes an engineer from a technician?**
 - Construct a Prototype
 - Test and Evaluate a Prototype
 - Redesign
- Although the terms “model” and “prototype” are often used interchangeably, they are not the same thing. A _____ is used to test different aspects of a product before the design is finalized. A _____ is used to demonstrate or explain how a product will look or function.**
 - model, prototype
 - prototype, model
- When following the engineering design loop, the different stages can occur in which direction?**
 - clockwise
 - counter-clockwise
 - both clockwise and counter-clockwise
 - in any direction, including shortcuts
- The engineering design process is iterative. This allows engineers to...**
 - become proficient at different engineering software applications
 - find the most optimal solution to a design problem
 - Incorporate both math and science concepts into a design problem
- When finding the solution to an engineering design problem, there is/are usually...**
 - only one possible correct solution
 - a very limited number of possible correct solutions
 - many possible correct solutions