Give three concrete examples of the use of satisficing or “quick and dirty” heuristics in the operation of a cognitive system. Examples can be from different systems. These don’t have to exist; just that they are possible.)

In the operation of a cognitive system, heuristics, or shortcuts of the mind, are often used to generate relevant ideas quicker. This fast thinking can help a system get to an immediate goal, or for a system to recognize the path in solving a problem that requires more mental work. Common sense, assumptions made by the human mind, and engineering techniques are operations of heuristic thinking.

Humans can be quick to associate words, numbers, or pictures with an idea. When solving a problem, the quickest way to get an answer is to first recognize the components of the problem. Say, if a person is lying still on the ground, a quick assumption is made that this person is either sleeping, or is in trouble. After this immediate assumption, System 2 of the brain takes over and would start to evaluate the legitimacy of these assumptions, and find which one corresponds with the rest of evidence given.

An example of the way heuristics bypasses logic is the Birthday Paradox- What are the chances two people in a room of 23 share the same birthday? The answer is there is a fifty percent chance, but most people’s first thought would be a much lower percentage. This is because human brains try to find the fastest solution, or a general area the number may lie. In this case, the guess is incorrect because the brain works linearly, not exponentially. The brain prefers to think in familiar ways, where unused synaptic connections (like thinking exponentially) are rearranged to make room for pathways of thinking that will be used more often (Breedlove & Watson, 2013).

To satisfice is to achieve a goal that is approximate enough to not make a difference. It is similar to how engineers approximate numbers when solving a problem because smaller numbers will not make a difference in the real world. For example, they may assume the ideal gas law for a system where variables, such as the forces on gas molecules are not considered. Instead, in heuristics, this happens subconsciously, but the concept is the same.

Evolutionarily, there is an advantage to be able to make quick decisions, and heuristics provides a path for this. This helps people in their everyday lives in common sense, and as a helping tool to make an engineer’s job easier. Although it may play tricks on the mind, it is mostly useful.
References: