1. Open-loop systems apply a process or algorithm to directly generate their output state from their inputs; they have no method of measuring the actual effect of their actions. Closed-loop control systems use their own output as a secondary input, and calculate a course of action depending on the error between the desired and current state. This process is called feedback.
2. Proportional, integral, and derivative
3. When the plant output nears the setpoint.
4. Yes