STEM Futures Cyber Engineering Workshop– Facilitators Guide

**Puzzle 1 (Tower Access Controls):**

Enter the line of code that contains the vulnerability: 25

Enter the correct SQL that would go on line 31 to complete the prepared statement (remember to use the Handbook if you need to**):** select \* from admins where email = ?;

**Puzzle 2 (Lift Operations):**

Enter the correct SQL that would go on line 31 to complete the prepared statement (remember to use the Handbook if you need to): **4**

Enter the action that needs to be taken to fix the vulnerable machine Patch/update/upgrade OS

**Puzzle 3 (GSC Website):**

What are some things the Science Centre could do to prevent an attack like this from happening again? (There are 4 in total):1. Create a web application firewall, 2. Filter all request parameters before they hit the server, 3. Sanitize all outputs received from the server for malicious code 4. Use modern up-to-date web frameworks, such as Angular or React with built in methods to handle server requests.

Enter the output of the function:&lt;script%20src=&quot;loginnow.js&quot;&gt;&lt;&#x2F;script&gt;

**Puzzle 4 (Identify the Vulnerability in the Machine):**

Which file or folder has been made vulnerable by the hackers:password-config

**Puzzle 5 (Recover the Tower Brakes):**

Input the new password here:Can be anything as long as it has uppercase, lower case, numbers, special characters and it at least 16 characters in length (e.g. Cloud123@#456sAfe)

Input keyspace here: (for cloud): **11881376** (26 (lower case letters) ^ 5 (password length)

Input keyspace here: (for Cloud123@#456sAfe): **9.3718924163640272905211111487177e+32** or **93718924163640272905211111487177** (87^17 (26 (lowercase letters) + 26 (uppercase letters) + 10 (digits) + 25 (special charcters - |<>{}!"£$%^&\*()@~#+'?=-\_) ^ 17 (password length))

Input hours here:(for Cloud123@#456sAfe): 2,603,303,448,990,007,580,700,308.65 (rounded up to **2,603,303,448,990,007,580,700,309**) ((93718924163640272905211111487177/10,000 (number of attempts per second)/60 (for mins)))/60 (for hours)

Input hours here:(for cloud): **0.33** ((11881376/10,000)/60)/60

**Puzzle 6 (Tower climate controls):**

What is the decoded password?we are the hackers and you cannot crack this code