**Short Summary of What Was Learned**

1. **Successful Execution**
   * The following AT commands were executed successfully:
     + AT : Verified communication with GSM module.
     + AT+CSQ : Confirmed signal strength was available.
     + AT+CMGF=1 : SMS Text Mode set successfully.
     + AT+CMGS : Message sending was successful using correct syntax and number format.
2. **Understanding the Sequence**
   * Learned the **logical flow** of sending and reading SMS:

AT → CSQ → CMGF → CMGS → CMGR

* + Each command has a purpose:
    - AT : Check modem
    - CSQ : Signal check
    - CMGF : Set text mode
    - CMGS : Send message
    - CMGR : Read stored message

1. **Error Encountered: AT+CMGR**

* **Symptom**: AT+CMGR=1 responded with an error.
* **Possible Causes**:

| **Cause** | **Explanation** |
| --- | --- |
| No SMS stored at index 1 | Memory index 1 may be empty or already read/deleted |
| Wrong SMS mode | If not in text mode (CMGF=1), message will appear unreadable or may error |
| Invalid index | Index out of bounds or not yet allocated |
| No SIM / SIM not ready | Sometimes affects memory read |

* **Workarounds & Fixes**

| **Fix Attempt** | **Description** |
| --- | --- |
| Use AT+CMGL="ALL" | Lists all SMS messages with their indexes (use to check if index 1 is valid) |
| Confirm AT+CMGF=1 again before CMGR | Reassert text mode |
| Use valid index from CMGL | For example, AT+CMGR=3 if SMS is stored at index 3 |
| Ensure SMS was stored before reading | Use AT+CPMS? to check storage availability |

**Conclusion**

* Successfully sent an SMS using AT command flow.
* The issue with AT+CMGR was likely due to invalid or empty message index.
* A useful next step is to always query with AT+CMGL to identify the correct message index before using CMGR.