# COMP 7500/7506 Lecture 23: Disk Access Time, SSD, NAS, and SAN

**🟊: >85%, 🟊🟊: 70-85%, 🟊🟊🟊: 55-70%, 🟊🟊🟊🟊: 40-55%, 🟊🟊🟊🟊🟊: < 40%**

**🟊🟊🟊🟊🟊 Exercise 1 (Plickers):** What is the average rotational delay if a hard drive’s RPM is 7200?

1. 6.90 microsecond
2. 0.14 millisecond
3. 4.17 millisecond
4. 8.33 millisecond

**🟊🟊 Exercise 2 (Plickers):** Suppose a 7200-RPM disk transfers a 4KB block with a 5ms average seek time, 1Gb/sec transfer rate with a .1ms controller overhead?

1. 9.27 ms
2. 9.302 ms
3. 5.302 ms
4. 9.17 ms

**🟊🟊🟊🟊 Exercise 3 (Group Discussion):** HDD vs. SSD**.** Please complete the following comparison table.



**🟊🟊🟊 Exercise 4:** What are the differences between network-attached storage (NAS) and storage area network (SAN)?



**🟊🟊🟊🟊 Exercise 5 (Group Discussion):** Why have separate storage networks and communications networks in SAN?

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**🟊🟊🟊🟊 Exercise 6:** Let’s compare NAS and SAN.

