**Benchmark Report**

**System Specifications:**

CPU Brand and Model: Apple M2 Pro

Number of CPU Cores: 12 (8 Performance + 4 Efficiency)

CPU Clock Rate: Up to 3.5 GHz

RAM: 16.0 GB Unified Memory

Memory Speed: 6400 MHz LPDDR5

Hard Drive Capacity: 512 GB

Hard Drive Type: SSD

**SSD Specifications:**

Max Sequential Read Speed: ~3,500 MB/s

Max Sequential Write Speed: ~3,000 MB/s

Max Random Read Speed: High (IOPS not officially disclosed)

**Benchmark Results**

|  |  |  |
| --- | --- | --- |
| **S.N.** | **Benchmark** | **Time (seconds)** |
| 1 | 32-bit Integer Operations Benchmark | 230.05 |
| 2 | 64-bit Floating Point Operations Benchmark | 153.62 |
| 3 | Memory Operations Benchmark | 764.81 |
| 4 | Hard Drive Benchmark 1 (Small Chunks) | 13.81 |
| 5 | Hard Drive Benchmark 2 (Large Chunks) | 1.62 |
|  | **Total** | **1163.91** |

**Geometric Mean of Benchmark Results**

**Calculation**:

Product = 230.05×153.62×764.81×13.81×1.62 ≈ 6.372×108

Geometric mean = ≈ 42.39seconds

**Calculation Result:** The geometric mean is approximately ~ 42.39seconds.

**Screenshots and Captions**

**Screenshot 1: Output of the 32-bit Integer Operations BenchmarkA screenshot of a computer program

Description automatically generated**

Caption: Shows the console output immediately after running the 32-bit integer operations benchmark, with a total execution time displayed.

**Screenshot 2: Output of the 64-bit Floating Point Operations Benchmark**

**A screenshot of a computer program

Description automatically generated**

Caption: Displays the results for the floating point operations, highlighting the computational efficiency and speed.

**Screenshot 3: Memory Operations Benchmark Result**

**A screenshot of a computer program

Description automatically generated**

Caption: Reflects both read and write times, demonstrating memory throughput and efficiency.

**Screenshot 4: Hard Drive Operations Benchmark (Small Chunks)**

**A screenshot of a computer program

Description automatically generated**

Caption: Details the read and write operations performed in smaller chunks, noting total execution times.

**Screenshot 5: Hard Drive Operations Benchmark (Large Chunks)**

**A screenshot of a computer program

Description automatically generated**

Caption: Exhibits faster read and write speeds due to larger block sizes, showcasing the potential for varied operational strategies.