## Solutions

**2.1**

- Finishes $6, 9, 11$ ✓.
- Turnarounds $6, 9, 11$ – average $26/3 \approx 8.67$ ✓.

**2.2**

- SJF order: P3 (2), P2 (3), P1 (6) ✓.
- Finishes $2, 5, 11$; average $18/3 = 6$ ✓.

**2.3**

- $1/100 = 1\%$ ✓.

**3.1**

- FCFS finishes $8, 12, 14, 18$; turnarounds the same (arrivals 0); average $52/4 = 13$ ✓.
- SJF order P3, P2, P4, P1: finishes $2, 6, 10, 18$; average $36/4 = 9$ ✓.
- RR ($q = 2$) first segments: P1 P1 | P2 P2 | P3 | P4 P4 | P1 P1 | P2 P2 ✓.
- RR finishes P3 = 6, P2 = 12, P4 = 14, P1 = 18: average $50/4 = 12.5$ ✓.
- Sufferer: P3 (burst 2) waits 12 under FCFS against 0 under SJF – 12 more ✓.

**3.2**

- $2/50 = 4\%$; $2/500 = 0.4\%$; $2/5000 = 0.04\%$ ✓.
- Avoid the 50 µs quantum: 4% of the CPU spent on switching is work that progresses nothing ✓.
- Nine segments imply 8 switches ✓.
- Total switch cost $8 \times 2$ µs $= 16$ µs ✓.