Solutions

2.1

- The brainstem – tracts cross there, cranial nerves exit ipsilaterally ✓.

2.2

- A sensory LEVEL (a segmental boundary on the trunk) ✓.

2.3

- The exception that proves the map – motor neuron disease (both UMN and LMN degenerate) ✓.

3.1

- Non-fluent speech → language cortex involved, LEFT hemisphere ✓.
- Brow-sparing right facial weakness → UMN VII lesion above the nucleus ✓.
- Left hemiparesis → corticospinal tract above the pyramidal decussation ✓.
- Convergence: left middle cerebral artery territory ✓.

3.2

- Symmetric, distal-first, no level → peripheral (length-dependent polyneuropathy) ✓.
- Absent ankle jerks = LMN/reflex-arc loss; normal plantars = no UMN ✓.
- Cord compression instead shows a trunk sensory LEVEL with UMN signs below ✓.
- Upgoing plantars with LMN signs would break the peripheral pattern (motor neuron disease) ✓.