

Solutions

Each answer shows the steps, then the **result**.

2.1

- dendrites receive incoming signals from other neurons; the axon carries the outgoing signal away from the cell body

2.2

- a neuron fires at full strength or not at all; a stronger stimulus produces more frequent firing, not a larger action potential

2.3

(a)

- it stays in the gap longer / accumulates

(b)

- the receiving neuron is stimulated for longer, so its firing is more affected

3.1 B

- intensity is coded by rate because each action potential is the same size

3.2 B

- myelin insulates the axon and speeds conduction

3.3

(a)

- when excitatory input exceeds inhibitory input by enough to reach threshold

(b)

- without inhibition every input would push toward firing, so the nervous system could not select between signals or stop a response