

Solutions

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

2.1

- A series of molecules that each activate the next, relaying the signal

2.2

- Each step activates many of the next molecule, amplifying the signal

2.3

- Cyclic AMP (or calcium ions)

3.1 C

- many activated molecules

3.2

(a)

- Each cell type has a different set of internal proteins and genes, so the same signal is acted on differently

(b)

- A small amount of signal can produce a large, fast response

3.3

- The receptor activates the first molecule, which activates the next, and so on (a cascade); at each step one active molecule activates many of the next, so the signal grows and reaches the response amplified