

Solutions

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

2.1

- Adenosine triphosphate; it stores energy (in its phosphate bonds)

2.2

- $\text{ATP} \rightarrow \text{ADP} + \text{P}_i + \text{energy}$

2.3

- Energy from respiration rebuilds ATP from $\text{ADP} + \text{P}_i$

3.1 A

- $\text{ADP} + \text{phosphate}$

3.2

(a)

- $\text{ATP} \rightarrow \text{ADP} + \text{P}_i + \text{energy}$

(b)

- The energy released is coupled to the contraction, providing the energy the muscle proteins need to move

3.3

- ATP is hydrolyzed to $\text{ADP} + \text{P}_i$ (used), and respiration re-adds the phosphate to remake ATP (recharged); this cycle repeats continuously