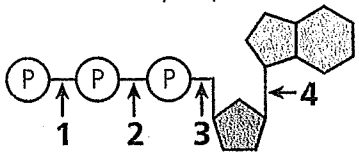
IT'S YOUR TURN

Please read each question carefully. For a multiple-choice question, circle the letter of the correct response. For a constructed-response question, write your answers on the lines.

Use the diagram below to answer question 1.

Adenosine triphosphate (ATP)



1 The breaking of which bond powers reactions in the cell?

A bond 1

B bond 2

C bond 3

D bond 4

2 Which pair of molecules are broken down by the cell to release energy?

A ADP and glucose

B ATP and glucose

C ATP and carbon dioxide

D ADP and carbon dioxide

3 Which pair of compounds are raw materials for cellular respiration?

A glucose and ATP

B oxygen and glucose

C carbon dioxide and ATP

D carbon dioxide and oxygen

4 Which does **not** take place in the mitochondria of the cell?

A Carbon dioxide is produced.

B Hydrogen ions cross a membrane.

C Glucose is broken down into organic compounds.

D The ATP synthase enzyme combines ADP and phosphate.

5 In which organism does respiration **not** take place in the mitochondria?

A bacteria

B maple tree

C seaweed

D yeast

6 You are preparing for a marathon. The night before the race, you eat a large bowl of pasta and a baked potato. Both are high in carbohydrates. During the race, you begin to feel hot and thirsty. You drink an energy drink to help you cool down.

A Explain how your meal helps you to prepare to supply energy to your muscle cells during the marathon.

B Explain why you begin to feel hot during the race, in terms of energy and cellular respiration.

C During intense effort, muscle cells may switch to anaerobic respiration. Describe what you should do to avoid this during the race.