1 The table below shows some data about an athlete at rest and during exercise.

<table>
<thead>
<tr>
<th></th>
<th>At rest</th>
<th>During exercise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Rate (Beats per minute)</td>
<td>70</td>
<td>140</td>
</tr>
<tr>
<td>Breathing Rate (Breaths per minute)</td>
<td>15</td>
<td>60</td>
</tr>
<tr>
<td>Volume of air inhaled per breath (cm³)</td>
<td>2000</td>
<td>5000</td>
</tr>
<tr>
<td>Total air inhaled (cm³ per min)</td>
<td>30,000</td>
<td></td>
</tr>
</tbody>
</table>

1 (a) Calculate the total volume of air inhaled in cm³ per min during exercise.

Show your working.

60 x 5000 [1 mark]

300,000 [1 mark]

(2 marks)

1 (b) A higher breathing rate is beneficial to exercising muscles.

Explain why.

Provides oxygen [1 mark]

For respiration or aerobic respiration [1 mark]

to release/provide energy (no produce energy) [1 mark]

or remove carbon dioxide from the body / blood [1 mark]

Produced by respiration [1 mark]

(3 marks)

1 (c) During prolonged exercise, the muscle’s reserves of glycogen become lower.

Explain why

It is broken down [1 mark]

To release / provide glucose [1 mark]

For respiration [1 mark]

(2 marks)

(Total 7 marks)