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

	At rest	During exercise
Heart Rate (Beats per minute)	70	140
Breathing Rate (Breaths per minute)	15	60
Volume of air inhaled per breath (cm^3)	2000	5000
Total air inhaled (cm^3 per min)	30,000	

1 (a) Calculate the total volume of air inhaled in cm^3 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.

Often forgotten is the fact that carbon dioxide needs to be removed as well as oxygen provided.

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)