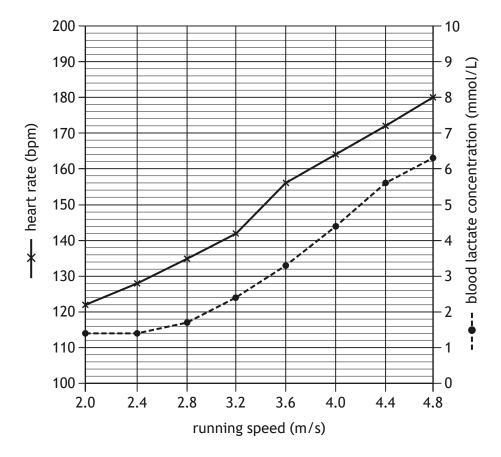
In an investigation an athlete ran at different speeds on a treadmill. Their heart rate and blood lactate concentration were measured at each running speed.

The results are shown in the graph.



(a)	(i)	Use values from the graph to describe changes in blood lactate
		concentration as running speed increased from 2.0 to 4.8 m/s.

2

(ii)	State the blood lactate concentration when heart rate was 135 bpm.

1

mmol/L

(iii) Calculate the percentage increase in heart rate as running speed increased from 2.0 to 4.8 m/s.

1

Space for calculation



1

8. (continued)

(b) The power generated by the same athlete at different heart rates was calculated in another investigation on the same treadmill.

The results are shown in the table.

Heart rate (bpm)	Power (watts)
84	120
92	135
112	148
140	162
164	184

(i)	Calculate the average increase in power generated as the heart rate increases from 84 to 164 bpm.
	Space for calculation

	watts per b	pm
	(ii) Using information in the graph and table state the athlete's blood lactate concentration when they generated 184 watts.	
	mmc	ol/L
)	Name the cell process that produces lactate.	
d)	The athlete's blood lactate concentration was recorded 10 minutes after the finished running and it had decreased to 1.1 mmol/L.	, À
	Explain this observation.	

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