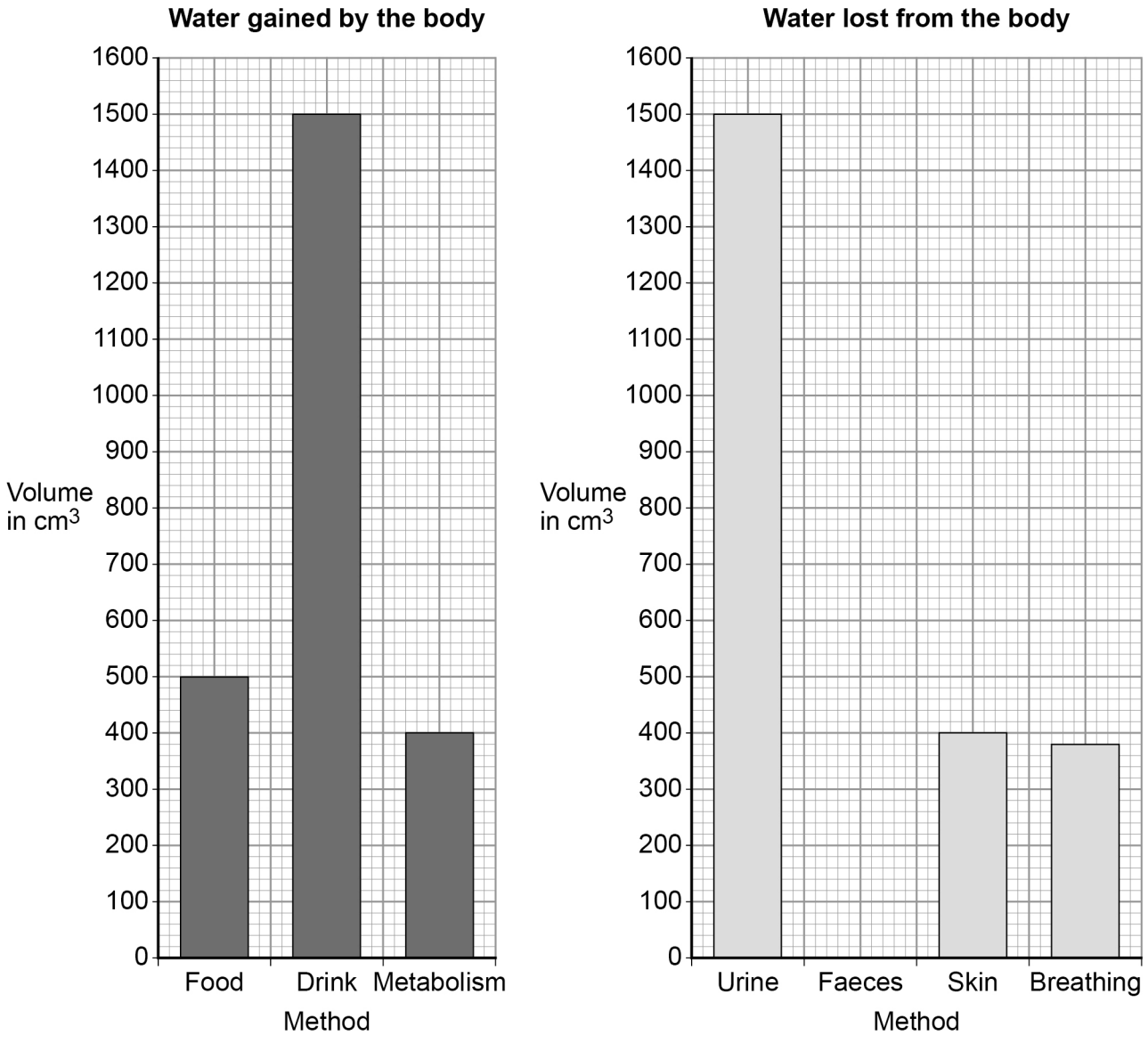
0 3 It is important to maintain water balance in the body.

Figure 4 shows how much water a person gained and lost by different methods in one day.

Figure 4



Do not write outside the box

When water is balanced, the volume of water taken in by the body is equal to the volume of water lost from the body.

0 3 . 1 Calculate the volume of water the person lost in one day in faeces.

Use information from **Figure 4**.

[2 marks]

Volume lost in faeces = _____ cm^3

0 3 . 2 **Figure 4** shows that one method of gaining water is by metabolism.

Which metabolic process produces water?

[1 mark]

Tick **one** box.

- Breakdown of protein to amino acids ☐
- Changing glycogen into glucose ☐
- Digestion of fat ☐
- Respiration of glucose ☐

Question 3 continues on the next page

The next day, the person ran a 10-kilometre race.

The volume of water lost from the body through the skin and by breathing increased.

0 3 . 3 Explain why more water was lost through the skin during the race.

[2 marks]

0 3 . 4 Explain why more water was lost by breathing during the race.

[3 marks]

8

Question	Answers	Extra information	Mark	AO / Spec. Ref.
03.1	2400 **and** 2280 **or** 500 **and** 380	an answer of 120 scores **2** marks	1	AO2 4.5.3.3
	120		1	
03.2	respiration of glucose		1	AO1 4.4.2.1 4.4.2.3
03.3	(more) sweating	ignore reference to vasodilation / vasoconstriction	1	AO2 4.5.2.4 4.5.3.3
	(because) exercise releases heat **or** need to cool the body **or** need to lose heat **or** need to maintain body temperature	do **not** accept energy being produced	1	
03.4		'more' does not need to be stated a second time to gain marking point 1 and marking point 2		AO2 4.5.2.4 4.5.3.3
	more energy needed	do **not** accept energy production do **not** accept energy needed for respiration	1	
	(so) more (aerobic) respiration		1	
	(so) increased breathing (rate / depth) (to supply oxygen **or** remove carbon dioxide / water)		1	
Total			**8**	