

WA7MMGN1

Non-spatial measurement

Core + Challenge

Australian Time Zones — Marking Key

I can convert times between Australian time zones, including daylight saving, and solve travel and scheduling problems.

For tutors and parents. Award method marks for correct working even if the final answer is wrong.

Marks summary

Section A Fluency: 16 Section B Core: 23 Section C Reasoning: 9 Section D Challenge: 11 **Total: 59**

Fluency: 1 mark each; accept an equivalent unsimplified answer for half credit at tutor's discretion.

A Fluency *answers and working*

/ 16 marks

Q	Answer	Working
1	11:00 am	+ 2 h
2	5:00 pm	+ 2 h
3	11:30 am	+ 1 h 30 min
4	4:00 pm	+ 1 h 30 min
5	6:00 pm	– 2 h
6	10:45 am	– 1 h 30 min
7	6:30 am	– 30 min
8	1:00 am (next day)	+ 2 h
9	11:00 pm (previous day)	– 2 h
10	2:20 pm	14:20 – 12 h = 2:20 pm
11	19:45	7:45 + 12 h
12	9:00 pm	+ 3 h
13	2:30 pm	– 2 h 30 min
14	11:00 am	+ 1 h
15	1 h 30 min	UTC+9:30 – UTC+8
16	5 h 25 min	8:45 → 1:45 is 5 h; + 25 min

B

Core *answers, working and marks*

/ 23 marks

Q	Answer	Working / sample response	Marks
1	5:30 pm	Perth is 2 h behind: 7:30 pm – 2 h <i>1 mark: – 2 h</i> <i>1 mark: 5:30 pm</i>	2
2	(a) 12:00 pm (b) 1:00 pm	Lands 10:00 am Perth time (a) + 2 h = 12:00 pm (b) + 3 h = 1:00 pm <i>1 mark: 10 am Perth</i> <i>1 mark each part</i>	3
3	8:50 pm	Lands 10:50 pm Sydney time Perth is 2 h behind: 8:50 pm <i>1 mark: 10:50 pm</i> <i>1 mark: – 2 h</i> <i>1 mark: 8:50 pm</i>	3
4	6:00 pm; no	Qld and WA don't use daylight saving, so it's always 2 h. <i>1 mark each</i>	2
5	Darwin 8:30 pm; Perth 7:00 pm	Same zone (ACST); – 1 h 30 min <i>1 mark each</i>	2
6	6:00 am	During daylight saving Perth is 3 h behind <i>1 mark: 3 h</i> <i>1 mark: 6:00 am</i>	2
7	2:00 pm	Sydney closes at 5:00 pm = 3:00 pm Perth The meeting must start by 2:00 pm Perth time <i>1 mark: 3 pm</i> <i>1 mark: 2 pm</i>	2
8	9:00 pm, 31 December	Midnight – 3 h <i>1 mark: 9 pm</i> <i>1 mark: 31 December</i>	2
9	3 days 2 h 5 min	Departure in Perth time: 12:55 pm Wednesday Wed 12:55 pm → Sat 12:55 pm = 3 days + 2 h 5 min <i>1 mark: convert</i> <i>1 mark: 3 days</i> <i>1 mark: 2 h 5 min</i>	3
10	8:00 am	8 h behind Perth <i>1 mark: 8 h</i> <i>1 mark: 8:00 am</i>	2

C Reasoning *sample answers and marking criteria*

/ 9 marks

Q	Answer	Working / sample response	Marks
1	The sun rises earlier in the east	The Earth rotates from west to east, so the sun rises in Sydney before Perth. Zones keep midday close to when the sun is highest. <i>1 mark: rotation</i> <i>1 mark: east first</i> <i>1 mark: purpose</i>	3
2	NSW uses daylight saving	NSW moves its clocks forward 1 h; WA does not. <i>2 marks</i>	2
3	No	1 h 30 min in standard time (2 h 30 min during daylight saving). <i>1 mark: no</i> <i>1 mark: correct difference</i>	2
4	Neither uses daylight saving	WA and Qld both stay on standard time, so the gap is always 2 h. <i>2 marks</i>	2

D Challenge *solutions and marking criteria*

/ 11 marks

Q	Answer	Working / sample response	Marks
1	5:00 pm – 7:45 pm	8:00 pm – 3 h = 5:00 pm + 2 h 45 min = 7:45 pm <i>1 mark each</i>	2
2	6:25 am	Lands 3:25 am Perth time Melbourne is on daylight saving: + 3 h 6:25 am <i>1 mark: 3:25 am</i> <i>1 mark: + 3 h</i> <i>1 mark: 6:25 am</i>	3
3	8:00 am – 7:00 pm Perth time	Start: Perth itself must be at least 8:00 am (the others are later already) End: Sydney 9:00 pm = 7:00 pm Perth Window 8:00 am – 7:00 pm <i>1 mark: start</i> <i>1 mark: end</i> <i>1 mark: window</i>	3
4	5 h 35 min	7:00 am AEDT = 4:00 am Perth time 4:00 am → 9:35 am 5 h 35 min <i>1 mark: convert</i> <i>1 mark: working</i> <i>1 mark: 5 h 35 min</i>	3