Year 8 Time and time zones - topic test

15 questions | 32 marks | 45 minutes

Work from short skills to connected reasoning and practical applications. Show enough working to explain each answer.

Equivalent correct methods earn the corresponding marks.

1. Write 7:35 pm in 24-hour time. [1 mark]

$7 + 12 = 19$; keep the minutes as 35.

Answer: 19:35

2. Write 00:40 in 12-hour time. [1 mark]

Hour 00 is the hour starting at midnight.

Answer: 12:40 am

3. Write 12:15 pm in 24-hour time. [1 mark]

The noon hour stays 12.

Answer: 12:15

4. Find the time from 09:45 to 11:20 on the same day. [2 marks]

15 min to 10:00 plus 1 h 20 min gives 1 h 35 min.

Answer: 1 h 35 min.

5. Find the time from 23:35 to 01:10 the next day. [2 marks]

25 min to midnight plus 1 h 10 min gives 1 h 35 min.

Answer: 1 h 35 min.

6. A shift starts at 22:40 and lasts 3 h 35 min. Give the finishing time and day. [2 marks]

$22:40 + 3\ \text{h} = 01:40$ next day; another 35 min gives 02:15.

Answer: 02:15 the next day.

7. Use the table to find travelling time, waiting time and total elapsed time. [3 marks]

Same-clock journey

Service	Departure	Arrival
Bus	08:00	08:30
Train	08:40	09:25

Bus: 30 min. Train: 45 min. Travelling time: 75 min.

Waiting time: $08:40 - 08:30 = 10$ min.

Total: $75 + 10 = 85$ min.

Answer: Travelling 75 min; waiting 10 min; total 85 min.

8. A bus arrives at 15:18. Trains leave at 15:24 and 15:35. At least 8 minutes are required to transfer. Choose the first possible train. [2 marks]

15:24 allows 6 min and fails; 15:35 allows 17 min and works.

Answer: 15:35.

9. At UTC+8 the time is 13:20. Find the simultaneous time at UTC+9:30. [2 marks]

Add 1 h 30 min.

Answer: 14:50.

10. At UTC−3 the time is 10:10. Find the simultaneous time at UTC+2. [2 marks]

The difference is $2 - (-3) = 5$ h.

Answer: 15:10.

11. UTC+10 reads Tuesday 02:15. Give the simultaneous day and time at UTC+1. [2 marks]

Subtract 9 h; cross back to Monday.

Answer: Monday 17:15.

12. UTC−4 reads Friday 21:50. Give the simultaneous day and time at UTC+5:30. [2 marks]

Add 9 h 30 min: $21:50 + 9:30 = 31:20$ on a continuous count. Subtract 24 h and advance the day.

Answer: Saturday 07:20.

13. A flight leaves at 09:00 from UTC+2 and lands at 14:30 in UTC+5 on the same local day. Find the flight duration. [3 marks]

Departure is 07:00 UTC; arrival is 09:30 UTC. The difference is 2 h 30 min.

Answer: 2 h 30 min.

14. A 2-hour flight leaves at 18:45 from UTC+9:30. Find arrival time at UTC+8. [3 marks]

Departure is 09:15 UTC; arrival is 11:15 UTC. Add 8 h for the destination: 19:15.

Answer: 19:15, same day.

15. A flight leaves 23:30 Monday at UTC+2, lasts 3 hours, and arrives in UTC+5. A connecting service leaves at 06:20 Tuesday; it needs a minimum 30-minute transfer. Does the connection work? Show the arrival time and transfer gap. [4 marks]

Departure is 21:30 Monday UTC.

After 3 h it is 00:30 Tuesday UTC.

Destination arrival is 05:30 Tuesday.

$06:20 - 05:30 = 50$ min, which is at least 30 min.

Answer: Arrival is Tuesday 05:30; the transfer gap is 50 min, so the connection works.