Year 8 time and time zones worksheet

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Name: _____ Date: _____

Question 1

Convert these times: (a) 7:45 am to 24-hour time, (b) 20:30 to 12-hour time.

Answer: _____

Question 2

A movie starts at 10:45 pm and runs for 2 hours 35 minutes. What time does it finish? Give your answer in 12-hour time.

Answer: _____

Question 3

A flight departs Sydney at 9:15 am on Wednesday. Sydney is on AEST (UTC+10). The flight takes 9 hours 50 minutes and lands in Dubai, where the local time zone is GST (UTC+4). What is the local time and day in Dubai when the plane lands?

Answer: _____

Question 4

A flight departs Sydney at 21:45 on Monday and arrives in Dubai 14 hours and 20 minutes later. Sydney is at UTC+11 and Dubai is at UTC+4. What is the local arrival time in Dubai? Give your answer as a 4-digit 24-hour time (e.g. 0930 means 9:30 am).

Answer: _____

Question 5

A train departs Melbourne at 11:40 pm on Friday. Melbourne is on AEST (UTC+10). The journey takes 3 hours 25 minutes and the train arrives in a city where the local time zone is ACST (UTC+9:30). What is the local arrival time and day at the destination?

Answer: _____

Question 6

How many minutes are there from 09:40 to 13:15 on the same day?

Answer: _____

Question 7

Convert 3.4 hours to minutes.

Answer: _____

Question 8

How many seconds are there in 2.5 hours?

Answer: _____

Question 9

In summer, Sydney is on UTC+11 and Perth is on UTC+8. How many hours ahead of Perth is Sydney?

Answer: _____

Question 10

A flight from Melbourne to Darwin takes 4 hours 25 minutes. How long is this in minutes?

Answer: _____

Year 8 time and time zones: answers and worked solutions

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Question 1

Key idea: In 24-hour time, hours run from 00 to 23. For pm times after 12 noon, add 12 to the hour. For 24-hour times from 13:00 onwards, subtract 12 and write pm.

1. (a) 7:45 am is before noon, so the hour stays the same. Write the hour with two digits: 07:45. 2. (b) 20 - 12 = 8, so 20:30 is **8:30 pm**.

Answer: (a) 07:45 and (b) 8:30 pm

Question 2

Key idea: Add hours first, then minutes, and regroup if minutes exceed 60. Remember midnight is 12:00 am and the day changes.

1. Start time: 10:45 pm. 2. Add 2 hours: 10 pm + 2 h = 12 am (midnight), so the time is 12:45 am. 3. Add 35 minutes: 12:45 am + 35 min = 1:20 am 4. The day has moved to the next day, so the movie finishes at **1:20 am**.

Answer: 1:20 am

Question 3

Key idea: Convert departure to UTC by subtracting the offset, add the flight duration to get arrival in UTC, then convert to the destination's local time by adding its offset.

1. Departure in UTC: 9:15 am - 10 h = 11:15 pm Tuesday (UTC) 2. Add flight duration of 9 h 50 min: 11:15 pm + 9 h = 8:15 am Wednesday (UTC) 8:15 am + 50 min = 9:05 am Wednesday (UTC) 3. Convert UTC to Dubai local time (UTC+4): 9:05 am + 4 h = 1:05 pm Wednesday (GST)

Answer: 1:05 pm Wednesday (Dubai local time)

Question 4

Key idea: Add the flight time to the departure time to get the arrival time in Sydney time, then convert to Dubai time using the difference between the time zones.

1. **Add the flight time:** 21:45 + 14 h = 11:45 Tuesday, then + 20 min = 12:05 Tuesday (Sydney time). 2. **Find the difference:** Sydney is UTC+11 and Dubai is UTC+4, so Dubai is 11 - 4 = 7 hours **behind** Sydney. 3. **Convert:** 12:05 - 7 h = 05:05 Tuesday (Dubai time).

Answer: 0505 (5:05 am Tuesday, Dubai time)

Question 5

Key idea: Convert departure to UTC, add the journey time to get arrival in UTC, then convert to the destination's local time.

1. Convert Melbourne departure to UTC (subtract UTC+10 offset): 11:40 pm Friday - 10 h = 1:40 pm Friday (UTC) 2. Add journey time of 3 h 25 min: 1:40 pm + 3 h = 4:40 pm Friday (UTC) 4:40 pm + 25 min = 5:05 pm Friday (UTC) 3. Convert UTC arrival to destination local time (add UTC+9:30 offset): 5:05 pm + 9 h = 2:05 am Saturday (ACST) 2:05 am + 30 min = 2:35 am Saturday (ACST)

Answer: 2:35 am Saturday (ACST)

Question 6

Key idea: Count up to the next whole hour, then add the remaining time.

1. From 09:40 to 10:00 is 20 minutes 2. From 10:00 to 13:15 is 3 hours 15 minutes, which is 195 minutes 3. 20 + 195 = 215 minutes

Answer: 215 minutes

Question 7

Key idea: Multiply the number of hours by 60.

1. 3.4 × 60 = 204

Answer: 204 minutes

Question 8

Key idea: There are 60 × 60 = 3600 seconds in an hour.

1. 2.5 × 3600 = 9000

Answer: 9000 seconds

Question 9

Key idea: Subtract the UTC offsets.

1. 11 - 8 = 3

Answer: 3 hours

Question 10

Key idea: Multiply the hours by 60 and add the extra minutes.

1. 4 × 60 = 240 2. 240 + 25 = 265

Answer: 265 minutes