Worksheet: Earth's Motions

name

The new book doesn't cover these topics, so we will use the very old book for this assignment. Get it done by the end of the period, or check out a book to take home. *Use sentences.

1. What is the point of figure 25.1 on page 457?

2. *Read topic 3 on pages 458-459. Why does the Sun rise in the east and set in the west, rather than rising in the west and setting in the east?

3. How long does it take the Earth rotate once on its axis?

4. *During daylight saving time "solar noon" happens at 1:30 pm in Helena. Explain what "solar noon" is?

5. *Look at figure 25.6 on page 461. What is it trying to show you?

6. According to figure 25.6, when it is 4 am in Montana, what time is it in India? (Be sure to indicate "am" or "pm".)

7. Look at figure 25.7 on page 462. A Monday night football game kicks off at 7 pm MST (Mountain Standard Time) in Helena. If it is broadcast live in each of the following cities, what time would the game begin?

| Portland | New Orleans | Honolulu | Juneau | Miami |
|-----------------------|----------------------------|----------|------------------------------|-------|
| 8. Look at the clock. | What time is it right now? | | What time is it right now in | |

Boston Seattle Honolulu

9. *Daylight saving time helps save energy and reduces car accidents. According to page 463, why do we have "daylight saving time"?

10. *Many people would prefer to have "daylight saving time" all year, rather than switching back and forth. The problem is that for several weeks in the winter sunrise would not happen until after 8 am for a large portion of the USA. Why is that such a problem?

11. *Look at figure 25.8. What is the blue line, and why is it so crooked?

12. What is the day and date today?

What is the day and date right now in Australia? (25.8 will help)

13. *According to Topic 9, we see some different constellations (stars) at different times of the year because Earth orbits around the Sun. Explain why our orbit causes us to see different stars (and constellations) at different times of the year.

14. On what date is the Earth closest to the sun? _____ On what date is Earth farthest from the sun? _____

15. *What effect doe the tilt of Earth's axis have on the length of day AND the temperature for the hemisphere that is leaning toward the sun?

16. *What would the seasons be like if the Earth were not tilted?

17. *What would be the effect if the Earth's axis were tilted more?

18. *Look at figure 25.11 on page 467. What is unusual about the land north of the Arctic Circle on June 21?

19. *What is unusual about the area south of the Antarctic Circle on this date?

20. What phenomenon (unique to areas near the poles during the summer) is shown in the photo on the bottom of page 467?

21. *Why are there so many "Suns" in the photo? (What did the photographer do?)

22. Look at the top diagram on page 468. As the Earth spins on December 21, does Helena spend more time in daylight, or more time in darkness?

23. *What is unusual about the length of daylight and darkness on March 21 and September 23?

24. *Of the three causes of seasons given on page 468, which one is the most important?

25. *What is the point of the diagram on page 469? Put the answer in your own words. Do not copy the caption.