TIME ZONE WHEEL

1. On the cutout map, use a ruler to draw longitude lines halfway between the ones that are already there. All longitude meridians should be 15 degrees apart.

2. Label the following locations on the cutout map:
   b. **New York City**, New York, U.S.A., North America: 40° 42' N, 74° 0' W
   d. **Freetown**, Sierra Leone, Africa: 8° 29' N, 13° 14' W
   e. **Cairo**, Egypt, Africa: 29° 52' N, 31° 20' E
   f. **New Delhi**, India, Asia: 28° 35' N, 77° 12' E
   g. **Beijing**, China, Asia: 39° 55' N, 116° 23' E
   h. **Tokyo**, Japan, Asia: 35° 41' N, 139° 46' E

3. On the back sheet, at the edge of the map, label the times so that you will be able to see them when the cutout is attached. *Hint: Earth rotates counterclockwise, 15° every hour.*

4. Use your Time Zone Wheel to complete the following charts:

<table>
<thead>
<tr>
<th>CITY</th>
<th>TIME</th>
<th>CITY</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Francisco</td>
<td></td>
<td>San Francisco</td>
<td></td>
</tr>
<tr>
<td>New York City</td>
<td></td>
<td>New York City</td>
<td>10:00 AM</td>
</tr>
<tr>
<td>Honolulu</td>
<td></td>
<td>Honolulu</td>
<td></td>
</tr>
<tr>
<td>Freetown</td>
<td>3:00 PM</td>
<td>Freetown</td>
<td></td>
</tr>
<tr>
<td>Cairo</td>
<td></td>
<td>Cairo</td>
<td></td>
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<tr>
<td>New Delhi</td>
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<tr>
<td>Beijing</td>
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<tr>
<td>Tokyo</td>
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<td>Tokyo</td>
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</tr>
</tbody>
</table>

<table>
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<tr>
<th>CITY</th>
<th>TIME</th>
<th>CITY</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Francisco</td>
<td>5:00 AM</td>
<td>San Francisco</td>
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<tr>
<td>New York City</td>
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</tr>
<tr>
<td>Tokyo</td>
<td></td>
<td>Tokyo</td>
<td>12:00 PM</td>
</tr>
</tbody>
</table>

5. If Earth rotates 15° each hour, how long does it take to rotate 1°? Show your work.

6. How many degrees does Earth rotate in one minute? Show your work.

7. Give two reasons why this Time Zone Wheel may not be exactly accurate in real life.