A. Climographs

Make climographs for the following two locations using the data provided. Then identify the climates based on their seasonal temperature & precipitation patterns. Remember that southern hemisphere summer is during Dec/Jan/Feb!

Location 1
Average Annual Temperature: 61ºF; Average Annual Precipitation: 20.7"

<table>
<thead>
<tr>
<th></th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
<th>JUL</th>
<th>AUG</th>
<th>SEPT</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temp</td>
<td>69ºF</td>
<td>68ºF</td>
<td>66ºF</td>
<td>61ºF</td>
<td>57ºF</td>
<td>55ºF</td>
<td>53ºF</td>
<td>54ºF</td>
<td>57ºF</td>
<td>59ºF</td>
<td>64ºF</td>
<td>67ºF</td>
</tr>
<tr>
<td>Precp</td>
<td>0.4&quot;</td>
<td>0.6&quot;</td>
<td>0.5&quot;</td>
<td>2.1&quot;</td>
<td>3.5&quot;</td>
<td>3.3&quot;</td>
<td>3.3&quot;</td>
<td>2.9&quot;</td>
<td>1.2&quot;</td>
<td>0.7&quot;</td>
<td>0.4&quot;</td>
<td>0.4&quot;</td>
</tr>
</tbody>
</table>

Location 2
Average Annual Temperature: 12ºF; Average Annual Precipitation: 7.4"

<table>
<thead>
<tr>
<th></th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
<th>JUL</th>
<th>AUG</th>
<th>SEPT</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temp</td>
<td>-49ºF</td>
<td>-33ºF</td>
<td>-10ºF</td>
<td>16ºF</td>
<td>40ºF</td>
<td>57ºF</td>
<td>63ºF</td>
<td>57ºF</td>
<td>42ºF</td>
<td>17ºF</td>
<td>-19ºF</td>
<td>-42ºF</td>
</tr>
<tr>
<td>Precp</td>
<td>0.3&quot;</td>
<td>0.2&quot;</td>
<td>0.1&quot;</td>
<td>0.3&quot;</td>
<td>0.4&quot;</td>
<td>1.1&quot;</td>
<td>1.6&quot;</td>
<td>1.3&quot;</td>
<td>1.0&quot;</td>
<td>0.5&quot;</td>
<td>0.4&quot;</td>
<td>0.3&quot;</td>
</tr>
</tbody>
</table>

Location 1 climate = __________________________

Location 2 climate = __________________________

(Note: Evaporation does not exceed precipitation in Location 2 so it is not a desert.)
B. Biomes
Match each biome to the appropriate description. (List the NUMBER not the biome name.)

1. Tropical Rainforest  6. Mediterranean Woodland & Scrub
2. Tropical Deciduous Forest  7. Midlatitude Grassland
3. Tropical Scrub  8. Midlatitude Deciduous Forest
5. Desert  10. Tundra

a. Xerophytic plant adaptations are required here because evaporation exceeds _______ precipitation.

b. Cold temperatures & permafrost prevent trees so grasses & lichens dominate. _______

c. Scrubby bushes & drought deciduous plants survive best here. Scattered trees _______
   are found at higher elevations. Dry summers promote natural wildfires.

d. Large grazers enjoy plentiful summer grass but winter brings extended drought _______
   when the ITCZ shifts away. Animals must then rely on water holes or migrate.

e. Grass dominates because precipitation is modest year-round. Temperatures _______
   are very seasonal though so animals need warm winter coats.

f. Shorter, less dense tree growth enables more underbrush in these warm forests _______
   than is found in the neighboring rainforest.

g. Year-round rain supports trees but cold temperatures cause many to lose their _______
   leaves in winter. Animals adapt by hibernating, migrating or storing food.

h. A huge diversity of plant & animal species is found in layered ‘canopies’. Found _______
   where the climate is hot & rainy all year.

i. Mostly needleleaf forest here with little plant diversity. Occurs where winters _______
   are severe & summers are short and cool.

j. Low scraggly trees & tall bushes dominate these warm areas because mountains _______
   & continentality limit precipitation. Reptiles, birds, insects & ground dwelling _______
   animals are found here but there is little species diversity.

C. Design a Species
Design a new species specially adapted to survive in one of the biomes above. In your description, _______
include AT LEAST 3 ADAPTATIONS. Your species can be either a plant or an animal.

Species Name: ___________________________ Biome: ___________________________

Description & Adaptations to Biome:
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________