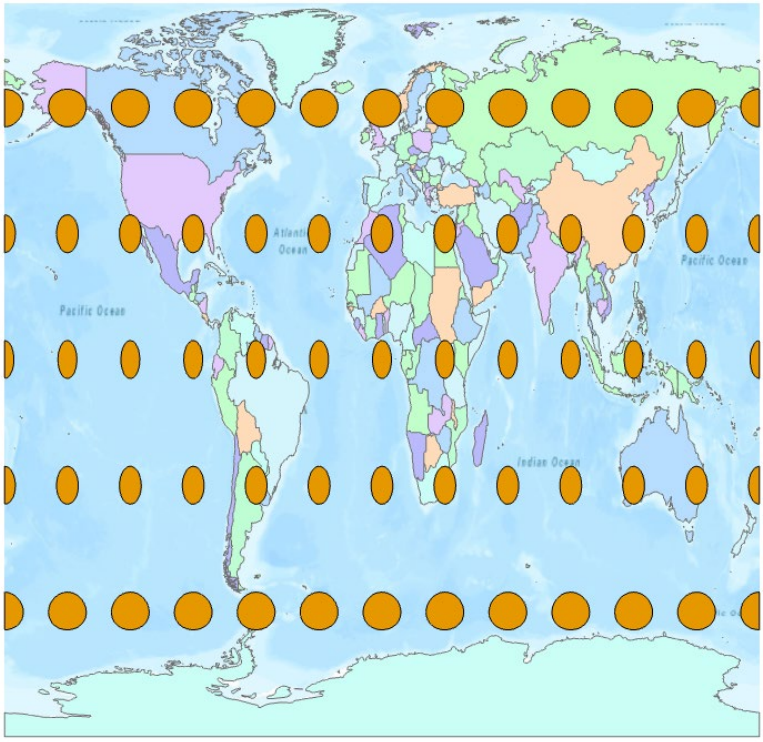
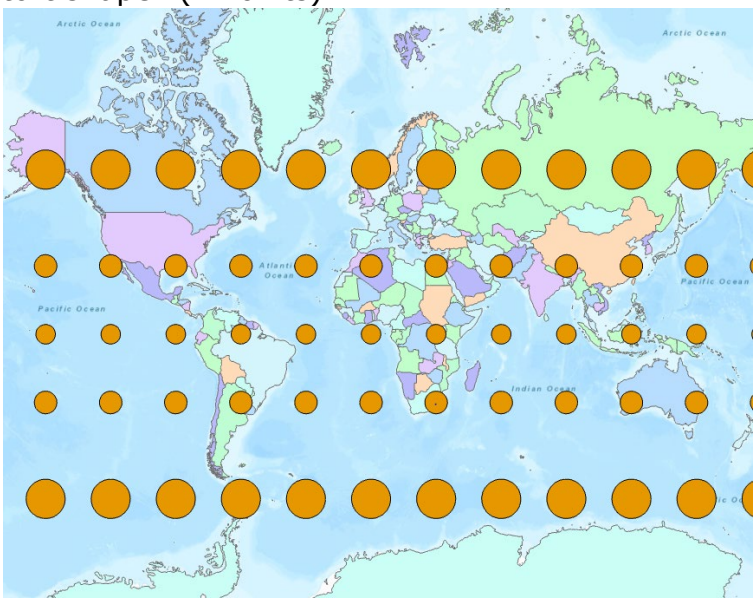
Geolocation and Unit Conversion

1. Convert the following latitude measurement to degrees and decimal degrees and round to 4 decimal places (remember, 60 minutes = 1 degree and 3600 seconds = 1 degree): 35° 12’ 51” North. (2 Points)
2. Convert the following latitude measurement to degrees and decimal degrees and round to 4 decimal places (remember, 60 minutes = 1 degree and 3600 seconds = 1 degree): 71° 32’ 9” North. (2 Points)
3. Convert the following latitude measurements to degrees, minutes, and seconds and round to the nearest second: 31.4167 North. (2 Points)
4. Convert 13.7 miles to kilometers and round to 1 decimal place. (2 Points)
5. Convert 5.8 kilometers to miles and round to 1 decimal place. (2 Points)
6. Convert 16.8 acres to hectares and round to 1 decimal place. (2 Points)
7. Convert 6.1 square miles to square kilometers and round to 1 decimal place. (2 Points)
8. What developable surface (cone, cylinder, or plane) is used by the Albers Equal Area projection? (1 point)
9. What developable surface (cone, cylinder, or plane) is used by the Mercator projection? (1 point)
10. What developable surface (cone, cylinder, or plane) is used by the UTM projection system? (1 point)
11. Using the Tissot Indicatrix, shown in orange on the map below, does this projection distort shape? (1 point)



12. Using the Tissot Indicatrix, shown in orange on the map below, does this projection distort shape? (2 Points)



13. On the map below provide the approximate UTM coordinates (easting and northing) for locations A and B. Make sure to use the correct format for reporting UTM coordinates. Here is an example UTM coordinate: 10S 706832m E 4344683m N. The units are meters. (5 Points)