

Name: _____

FO-4313/6313 Spatial Technologies for Forest Resource Management
Third Hour Exam, 2002

Formulas:

1. What is a GIS? _____
_____ (10)

2. Name and distinguish between the two primary data types in a GIS:
 - a. _____ : is _____ (5)
 - b. _____ : is _____ (5)

3. Name and distinguish between the two data formats (structures) used to display/store **spatial data** in a GIS:
 - a. _____ : _____ (5)
 - b. _____ : _____ (5)

4. Explain the differences between latitudes/longitudes and UTM's:
Latitudes/Longitudes: _____
_____ (5)
UTMs: _____
_____ (5)

5. After printing a draft of your GIS map using ARC/View, you see that the scale bar is not a standard scale bar with 1 inch graduations and you wish to compute a Representative Fraction for the graphic scale bar. If one graduation on the scale bar is 45/60 inches in length and this graduation represents 1,028.7 **meters** on the ground, the computed RF is 1: _____ (10)

6. Explain (in a series of concise/brief statements) **the reason** for each of the steps you performed during the delineation of timber stands on a mylar overlay from non-rectified

aerial imagery and transferring the stand delineations with a vertical sketch-master to a planimetric base map where control points were plotted to a 1:24,000 scale using UTM projection and NAD-27 datum.

a. Locate control points on the photograph/overlay: _____

_____ (6)

b. Delineate timber stands on the imagery with a stereoscope: _____

_____ (6)

c. Plot control points on a base map at a specified scale with a specific projection and datum: _____

_____ (6)

d. Transfer timber stand delineations with a vertical sketch-master to the base map: _____

_____ (6)

7. Scale is defined as: _____
_____ (10)

8. An **information system** is a set of operations that provide for:
a. _____ (2)
b. _____, and (2)
c. _____ (2)

9. Three components of **vector-type spatial data** are:
a. _____ (2)
b. _____ (2)
c. _____ (2)

10. Two types of **attribute data** in a GIS are:
a. _____ (2)
b. _____ (2)

Bonus: 5 points; all or none.

What makes NAD 27 and WGS 84 datums different **OR** what happens if you attempt to overlay WGS 84 data on a NAD 27 theme?