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**GEOG 523 Fall 2023**

# Question 1

**Datum** - D North American 1983

**Projection** - Transverse Mercator

**Units** - Meters

# Question 2

**57,309,186** LAS points in this LIDAR dataset.

# Question 3

0.234 meters is the average point spacing, **meters** are the units of measurement. **Question 4**

0.907 as the complete average sampling value for all the LAS points.

# Question 5

Water in the study area contains NODATA values. This is because water is not a reflective surface and LIDAR imagery won't be able to be gathered.

# Question 6

Classification values that are missing:

8, 10, 11, 12, 13, 14, 15, 16, 18, 19-63, 63-225.

# Question 7

Buildings and high vegetation are displayed with multiple returns, and water objects are displayed with no returns within the objects.

# Question 8

Class codes used to create DSM:

2, 3, 4, 5, 6, 9, 17.

# Question 9

**Min value** - 56.56

**Max Value** - 230.316

# Question 10

**Class Codes:** 2, 9

# Question 11

**Min Value:** 56.56

**Max Value:** 220.134

# Question 12

Used interval of the average (0.907).

Contours don't match as well as they could because of user input errors, or different scales or resolutions that have conflictions with the base shapefile.

# Question 13

**Raster Calculator** can perform a differential between raster features.

**Surface Difference** calculates the difference between two surfaces ie DSM/DTM **Question 14**

Approximate height of the tree is 169 meters, with a class code of 5, meaning it's high vegetation.

# Question 17

