

Name: _____

FO-4313/6313

Third Hour Exam A, 2005

“Scale, Scale, Scale - Betheden Quad, Photo 210”

$$RF = \frac{1}{S} = \frac{d}{D} = \frac{f}{(H-h)}$$

Show calculations or no partial credit!

1. The scale of the 7.5' Quadrangle can be expressed as:
 - 1 inch = _____ ft (2)
 - 1 inch = _____ meters (2)
 - 1/60 in. = _____ meters (2)

2. The two (2) artificial rectangle coordinate systems depicted on the Quad are:
 - A. _____ (5)
 - B. _____ (5)

3. The true geographic point location system for a point on the earth's sphere on the Quad is: _____ (5)

4. The geographic datum used for the projections on the Quad is: _____ (5)

5. If we assume the scale on the Quad is constant and represents true ground distance, then:
 - A. straight-line ground distance between Points A and B (on Quad) is: _____ ft (5)

 - B. image distance between Points A and B (on Photo) is: _____ inches (5)

 - C. average RF photo scale between Points A and B (on Photo) is: _____ (5)

 - D. RF photo scale has a equivalent area scale of 1 sq. in. = _____ acres (4)

6. Given that the UTM coordinate of:
Point A = 319,093 m E, 3,677,132 m N, Zone 16N

Calculate the UTM coordinate of:

Point B = _____ m E, _____ m N (10)

7. Using the UTM coordinates from Question 6 above;

A. the **straight-line distance** between Point A and B is: _____ meters (10)

B. the **true bearing** from Point A to Point B is: _____ (10)

8. The Latitude-Longitude of Point B is:

Latitude = _____ N (5)

Longitude = _____ W (5)

9. If you want to contract for new aerial imagery with a scale of **1:16,000 at the average elevation of Point B**, the contractor with an aerial camera of 152.4 mm focal length must fly at a constant aircraft altitude of: _____ ft (10)

10. At the desired scale of 1:16,000, the smallest object that can be detected on the new imagery (assuming the human eye can see 0.002 inches with slight magnification) is: _____ ft (10)

Bonus: All or None 10 points

The syllabus for FO4313 stated that Exam 3 counted _____ % and the average pop quiz grade counted _____ % of the final grade.