

Holt Invitational Road Scholar 2018 – Answer Sheet

Team # _____ Team Name _____

Your Names _____

Please write clearly, if your answer cannot be read it cannot be scored.

1. _____

2. _____

3. _____ and 4. _____

5. _____

6. _____

7. _____

8. _____ and 9. _____

10. _____

11. _____, 12. _____ and 13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

*20. _____

21. _____

*22. _____

23. _____

24. _____

25. _____

26. _____

27. _____

*28. _____

29. _____

30. _____

31. _____

32. _____

33. _____

34. _____

35. _____

36. _____

37. _____

38. _____

39. _____

40. _____

* are Tie Breaker Questions

Use the satellite map of Detroit Downtown to answer

41. _____

42. _____

43. _____

Please write clearly, if your answers were unclear and ineligible, they would not be scored.

Use the Topographic map Fig 2.1 for the next set of questions (#s 1 thru 20)

From our home state of Great Lakes, we are set out to visit our name-sake City situated in a neighboring state south of us. You guessed it correct - it is Michigan City Indiana.

1. (3 pts) Magnetic declination is the angular difference between the _____ and _____ at the point of observation. What does the marking 'GN' stand for? _____
2. (2 pts) What is the magnetic declination for the Michigan City Quadrangle? What is the direction of this declination?

a. _____ (1 point)

b. _____ (1 point)

3. When was this magnetic declination observed? - _____
4. Once observed and recorded Magnetic declination of a location never changes. Is this True or False ? _____
5. Which UTM Zone does this Michigan City Quad belong to? (Refer Fig 2.2)

6. (2 points) Which UTM Zone(s) does your home state belong to? (Refer Fig 2.2)
_____ **(2 points)**
7. (2 pts) Name a creek that has its mouth ('flows into') in Lake Michigan. What is its stream direction? _____ **(1 point),** _____ **(1 point)**
8. What is the tallest elevation of this area, adjoining the above creek from question #7?
_____ **(1 point)**
9. (4 pts) Compute the change in elevation between the tallest point (Question #8 above) and this creek. Compute the 'Slope gradient' from this tallest point to this creek where it crosses the traditional West Michigan Street (US Route 12). Write your slope gradient with the relevant units. Showing calculation gives you some credit.

Change in elevation _____ (1 point)

Slope Gradient _____ (3 points)

10. How many graticule marks can you find on this Quad map? _____
11. * (2 pts) List the Geo Coordinates of the south east and north west graticule marks

South East graticule mark - _____

North West graticule mark - _____

12. Which national park is located on the north western sector of this Quad ?

13. * (2 pts) Name the Quadrangle that adjoins the northern boundary of this Michigan City Quad?
Which adjoining Quad is situated on the north east boundary?

North Boundary (1 point)

NE Boundary (1 point)

14. Locate the landform that is roughly on the east of US route 421 and at the 41 deg 40 min 0 sec N latitude _____

15. Name the river that flows through this Quad and name the county where this river flows mostly in? _____

16. Which county does Michigan city belong to? _____

17. Spot the hill just south of the only Interstate Highway that runs through the Quad. What is the highest elevation of this hill? _____

18. This is not the tallest point (elevation) of this Michigan City Quad?. Answer 'Yes' or 'No'. _____

19. Which sector of the Quad does this hill belong to? _____

20. * (2 pts) Calculate the Azimuth and Bearing of lines 'A' & 'B' from Fig 2-3 with proper units / notation

_____ (1 point)

_____ (1 point)

For the next set of questions use the Fig 3-1 named as PLSS Grid. A PLSS surveyor meets you the 'Road scholar' and asks you the following:

21. What geometric shape are the PLSS surveys and grids typically drawn as ?

22. Name the location / points using which as a reference; all the PLSS grids were marked throughout the country?

23. (2 pts) Which imaginary lines run parallel to the Latitudes in a PLSS grid system? Name both the names for them.

_____ (1 point)

_____ (1 point)

24. Which are the lines that run parallel to the Principal Meridians in a PLSS Grid?

25. * (4 points) Using the standard PLSS system of notation write down the coordinates of sections marked as 'A' and 'B' from the Fig 3-1 - PLSS Grid

a. A _____ (2 points)

b. B _____ (3 points)

26. What is the typical area of a township per the PLSS guidelines?

Fig 2-3 Azimuths & Bearings

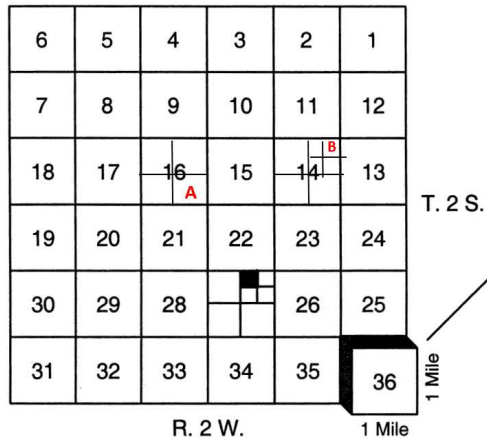
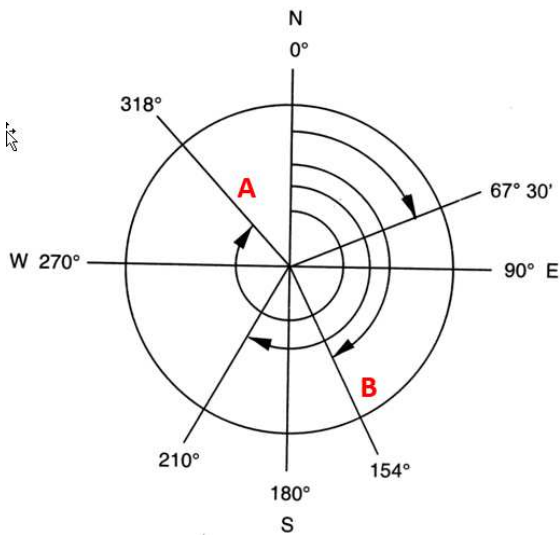


Fig 3-1 PLSS Grid

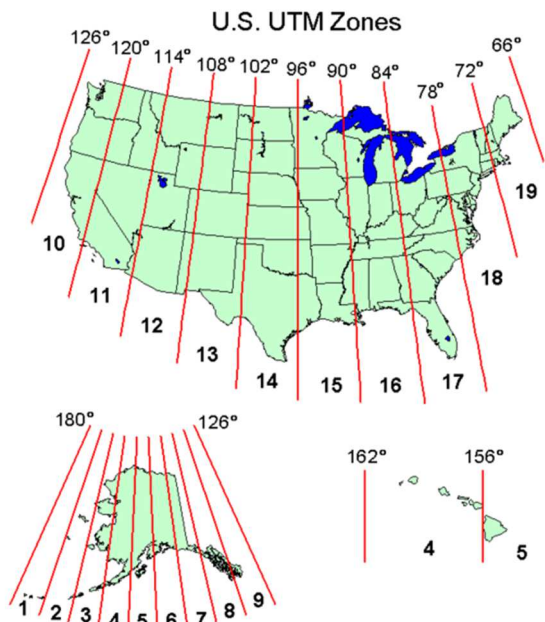


Fig 2-2 UTM Zones of the US

Basic Concepts

1. _____ 2. _____ 3. _____

4. _____ 5. _____ 6. _____

7. _____ 8. _____ 9. _____

10. _____

***** END OF TEST*****