

Road Scholar (Test)

Holt Invitational

February 24, 2018



Road Map Test

Notes For Competitors

1. **PLEASE**, write your team number, school name and your names on top of **both answer sheets**. Otherwise your answer sheets are lost in wilderness!
2. **Do NOT write anything on the maps!** Write on the answer sheets, not the test. If you write anything on the test, You make it easy for later teams to figure out answers.
3. The test and the answer sheets are printed on **both** sides of the paper. Remember to turn them over.
4. **NOTE:** All units of measurement need to include units or their abbreviations or symbols. All highways need to be identified by type and number (Interstate, Federal, State, etc., or their common abbreviations or symbols).
5. Some questions are worth more points than others. This will be indicated next to the question number. If there is no indication of points, it is worth one point. Tie breaker questions are marked with an asterisk by the question number.
6. There are no negative points. Remember that the team that gets most points win, not whether you finish the test or not. Easy questions are mixed in with hard ones.
7. **NOTE:** All references to a city name followed by “Inset” (e.g., Flint Inset) on the highway map test refer to the more detailed city maps on the highway map. Sector Reference System identifications of points on the topographic map are indicated in both direction and number forms and by underlining, e.g., Southwest Sector
8. **Please look for end page marker to make sure you have all the test sheet**

“ ***** End of Test ***** ”

Road Map Test – Michigan DOT map

Write the answers on separate answer sheet. Fill in the blanks corresponding to the blank number. Please use the Detroit Metro area map for the paragraph below:

Jim and Jane are friends who live in Northville City (D6) which is a suburb of Detroit. They have friends coming from out of state whom they have to pick up from Detroit Metropolitan Wayne County airport which is near the city of (1) (Name of the City). They started driving in their car and took I-275 South towards the airport. At Interchange/Exit # 17 they took I-94 East which is also called (2) (Name of the Interstate). Jane looked at the map and said there are two terminals at the airport. The names of the two terminals are (3) and (4). They called their friends to know which terminal they would be arriving at. Tim and Tara are their friends who are coming from Dallas, TX. They picked up their friends and headed towards Northville to Jim's home. They were driving on I-275 North where Tim saw US-12 at Exit Number 22 in City of Wayne. It is a US Highway which is also called (5) (another name for the road). Jim told Tim that it is one of the oldest Highways in Michigan. At Exit 25 they saw M-153 which is a (6) (Freeway, Federal Highway, State Highway, Local Road). Tara asked how long a drive it is to Northville. Jim replied it is going to take around 20 minutes and said that he has to take Exit 167 to 8 Mile road and go towards (7) (East, West, North, South) to reach his home in Northville. Tara looked at the map and said 8 Mile Road is the border of two counties namely (8) and (9). The four friends had some coffee and a chat at Jim's home. They decided to go to camping next day. Tara looked at the map and said, "Hey look there is a State Park very close to Northville at the Intersection of 8 Mile Rd and Beck Rd." The name of the park is (10). Tim said, "Look at the Michigan State Parks legend and see if there are camping facilities at that park." Tara said, "There are (11), (12) and (13) facilities at the park. There are 0 Camping Sites!" Jim and Jane said, "We know, there are no camping facilities at that State Park. We live here." They found that Brighton State Recreational area has all the amenities and also has (14) (number of) Camping sites. They decided to go there next day. The next day morning they packed their camping tents and other supplies and set on 8 Mile Rd towards west from Northville. On the way they saw Maybury State Park. After passing (15) (Name of the Road) the road turned into a gravel road. The 8 Mile Rd then came to a dead end at Marshall Rd, and they took a right and a left turn on 9 Mile Rd. 9 Mile Rd became (16) which is the name/number of the state highway. They saw (17) Lake between 7 Mile Rd and 9 Mile Rd on the east side of US-23. Brighton State Recreational Area is in (18) County. After reaching the park Headquarters they found that all the Camping sites were taken and none left. Tim and Tara were disappointed. Jim and Jane said that there is nothing to worry. They said that Upper Peninsula of Michigan is much beautiful place to camp. They decided to go to Upper Peninsula and started driving north on US-23 freeway. They passed MI-59 at (19) (exit#) and proceeded north. There is a green colored car symbol at that exit. It means that there is a (20) near it. Tim asked what is the minimum speed required on a Michigan freeway. Tara looked at the Michigan Laws section of the map and said it is (21).

Please use Michigan map for the below paragraphs:


They continued driving towards Flint. Tim observed that there is big airport near Exit 115. He wondered which airport it is. Tara looked at the Flint area insert map and said that the name of the airport is ____(22)__. The US-23 became Interstate ____(23)__ near Flint. Both of them share the roadway between Flint and Saginaw.

Jim said that there is a rest area near Exit 131. Jane said the next rest area is near Exit # ____(24)__ after passing Zilwaukee. It is nearly ____(25)__ Miles away. Tim and Tara asked Jim where they are headed towards. Jim said that they are going to Andrus Lake Campground which is north of Paradise. Tim looked at the mileage chart and said the distance between Flint and St. Ignace is ____(26)__ miles. They had to pay toll on the ____(27)__ Bridge and entered the Upper Peninsula. They took MI-123 at exit # 352. The distance to Paradise from Exit # 252 is nearly ____(28)__ miles. They saw that County Road named ____(29)__ crossed MI-123 at Trout Lake. Tim and Tara really liked the wooded Upper Peninsula. They setup tents at Andrus Lake Campground and took rest for the night. They were glad that they packed food for dinner. The recreational harbor just north of Paradise is ____(30)__.

They went to the Upper and Lower Tahquamenon Falls the next day and did some hiking. Tim and Tara were excited to spot wildlife in the State Park area near Newberry. They

would be able to spot ____(31)__ kind of wildlife (Hint: look for ).

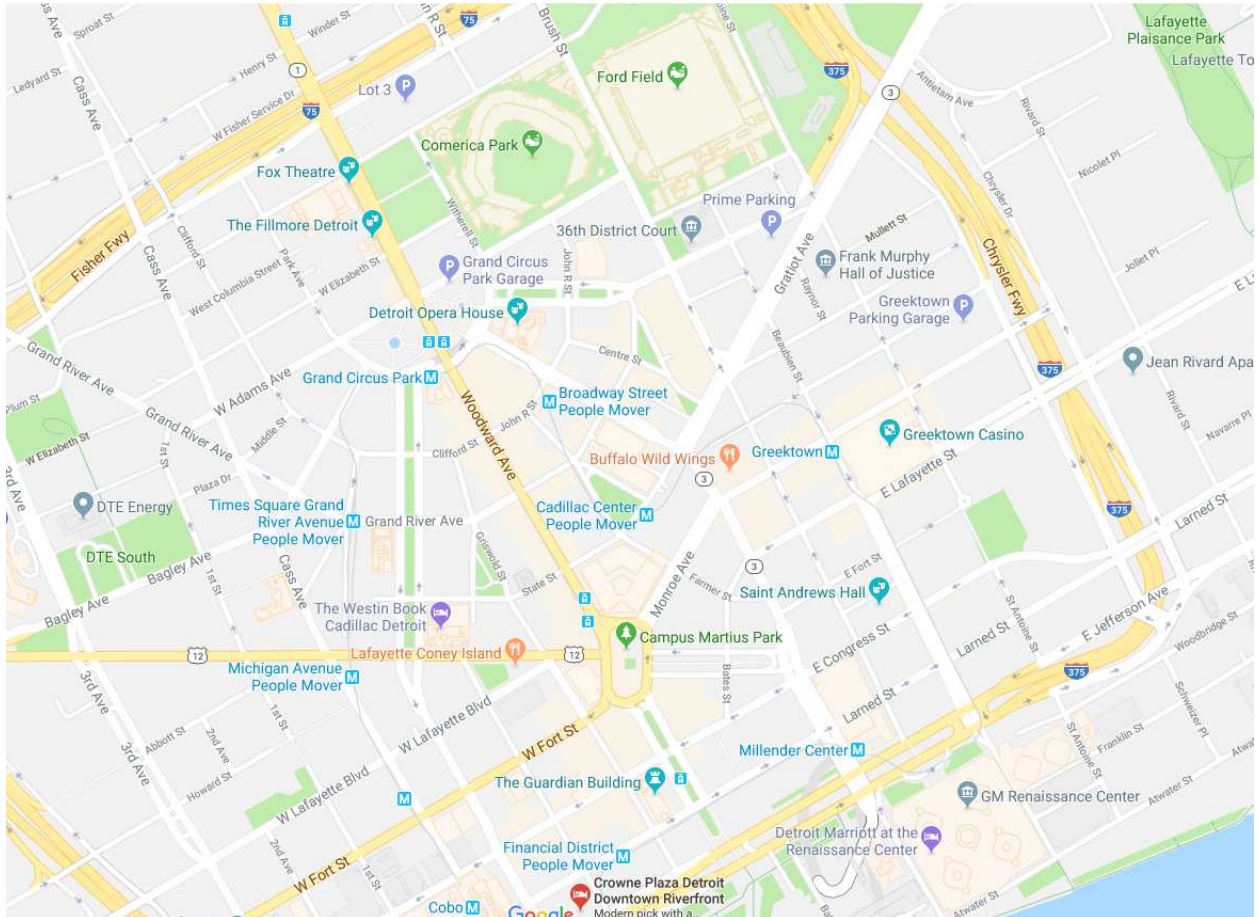
Paradise is in ____(32)__ County and ____(33)__ is the County seat for that County. The next day they wanted to take a tour of the Pictured Rocks National shore. So they started driving towards Munising from where the boat tour of Pictured Rocks starts. There is a

____(34)____ Harbor (Hint: ) near Munising. Munising is on the shore of Lake ____(35)__. After enjoying the beauty of Pictured Rocks, they wanted to go to Manistique. Manistique is on the south side of Upper Peninsula and is on the shores of Lake ____(36)__. They have to take State Road ____(37)__ towards south from Munising to Manistique. By that time they were tired and wanted to take rest for the night in a campground. They found that ____(38)__ Campground was the closest state forest campground which is near the town of Gulliver. The next day morning they started heading towards St. Ignace on the Scenic Byway which is also a US Highway. The name of the road is US-2 which goes through Naubinway and then to St. Ignace. They crossed the Mackinac Bridge and entered Lower Peninsula and heading south on I-75. At Exit # ____(39)__ the freeway forks into Federal Highway ____(40)__ and Interstate I-75. They stayed on I-75 towards Flint. Finally they went back to Jim's home in Northville after camping in Upper Peninsula.

Use the Internet map of Detroit Downtown to answer the following questions:

41. What is the nearest parking garage for Detroit Opera House?
42. Michigan Avenue (US-12) ends at which park?
43. Fox Theater is on which road?

Internet Map of Detroit Downtown Area:



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?
3. When was this magnetic declination observed?
4. Once observed Magnetic declination of a location never changes. Is this True or False ?

5. Which UTM Zone does this Michigan City Quad belong to?
6. (2 points) Which UTM Zone(s) does your home state belong to? (Refer Fig 2.2)
7. (2 pts) Name a creek that has its mouth ('flows into') in Lake Michigan. What is its stream direction?
8. What is the tallest elevation of this area, adjoining the above creek from question #7?
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).
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
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?
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 'A' & 'B' from Fig 2-3 with proper units / notation

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 them as a reference the PLSS grids are marked ?
23. (2 pts) Which imaginary lines run parallel to the Latitudes in a PLSS grid system? Name two different names they are called as?
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 _____ (2 points)
26. What is the typical area of a township per the PLSS guidelines?

Fig 2-3 Azimuths & Bearings

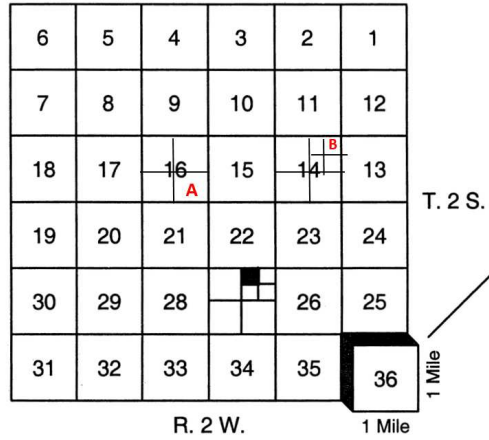
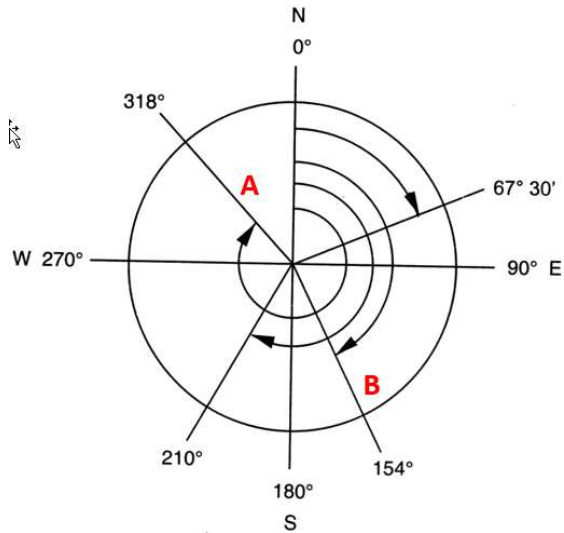


Fig 3-1 PLSS Grid

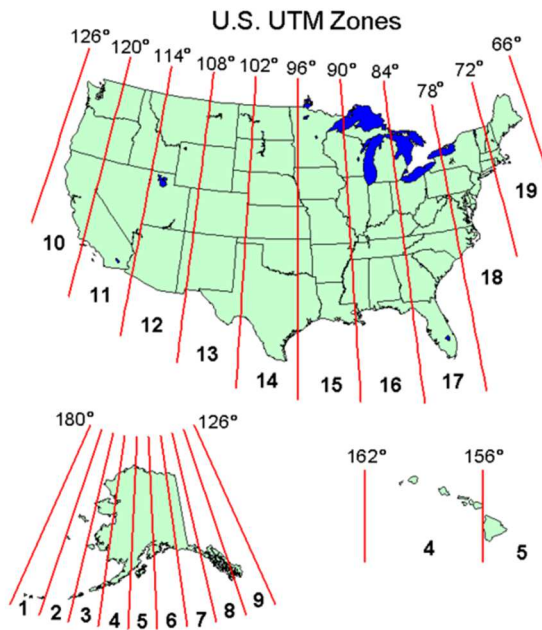


Fig 2-2 UTM Zones of the US

Basic Concepts questions

1. The ratio of distance on a map
a. Series b. Scale c. Inset d. legend
2. The outer boundaries of the map are called
a. Contour lines b. map lines c. Map Boundary d. Neat Lines
3. Example of Latitude of a place on a map looks like this(mark all right Answers)
a. 39°45'30"N b. 39°45'30"Nw c. 39°45'30"S d. 39°45'30"E
4. Example of Longitude of a place on a map looks like this(mark all right Answers)
a. 39°45'30"S b. 39°45'30"N c. 39°45'30"E d. 39°45'30"SE
5. A line on a topographic map that connects points of equal elevation is called
a. Key b. Series c. Contour Line d. Index Contour
6. The Highway Map helps us to gather the following data (**mark all right Answers**)
a. Inset Maps b. Mileage c. Travel Time d. all of the choices
7. A map that shows the shape of the ground as well as location and elevation of surface features using contour lines
a. Topographic b. Highway c. Satellite d. None of the Choices
8. The distance between two contour lines is Known as
a. Contour Index b. Contour Interval c. Interval Lines d. Neat Lines
9. The scale for a topographic map is
a. 1:24000 b. 24000:1 c. 1:35000 d. 1:40000.
10. Series of All quads are in
a. 10 min b. 20 minutes c. 15 min d.7.5 min

***** End of Test *****