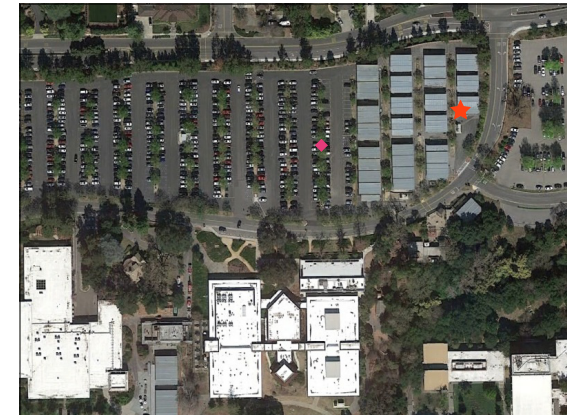
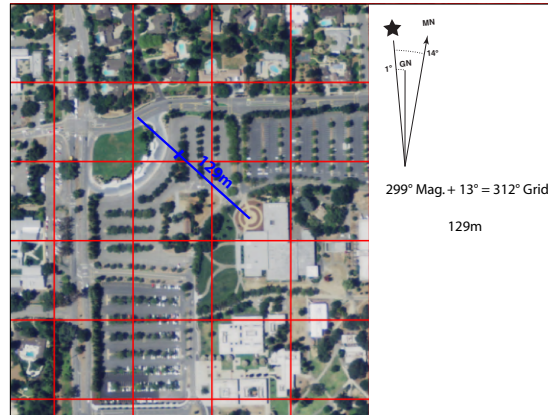
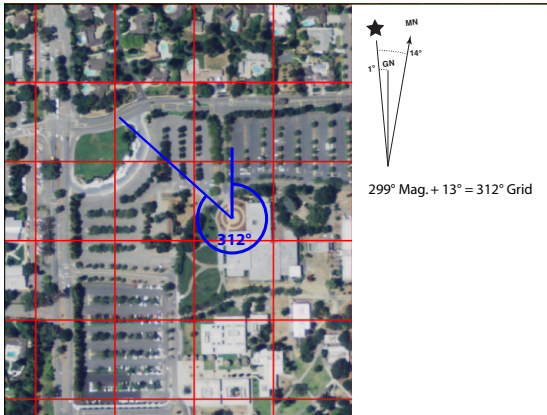
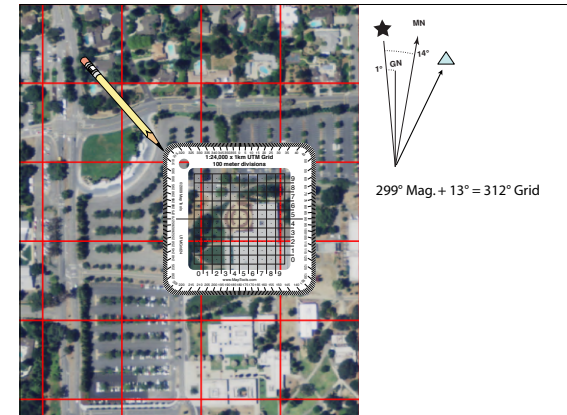


Reminders...

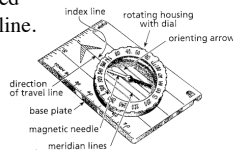
- Homework due on Saturday
- Quiz on Sunday
- We are here until 10pm tonight
- We start at 9am tomorrow.

Plotting a Bearing



Traveling Along a Heading

- Set the desired heading on the ring at the index line.
- Box the magnetic needle in the orienting arrow.
- Travel in the direction pointed to by the direction of travel line.



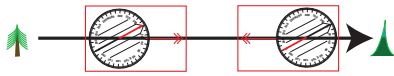
Traveling Along a Heading

- Sight to a distant object, and then travel towards that object.
- In poor visibility, darkness, or featureless landscapes, send a partner ahead to the limit of visibility and align them with the heading.
- Take back bearings on your starting point.

Using a back bearing

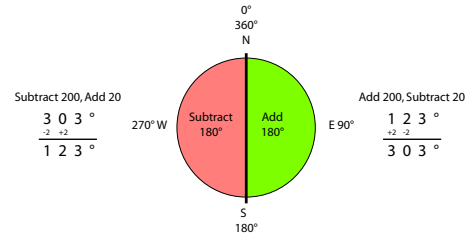
- A *back bearing* is taken looking back to where you took the original bearing.
- A back bearing is 180° different from a forward bearing.
- An easy technique is to align the south end of the needle rather than the north end.

Check that you are on course using a back bearing



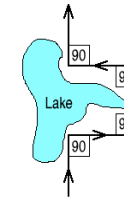
- Don't touch the dial
- Just align with the south end of the needle

Calculating a back bearing



Traveling Along a Heading

- Carefully move around obstructions in the path with a perpendicular dog leg.

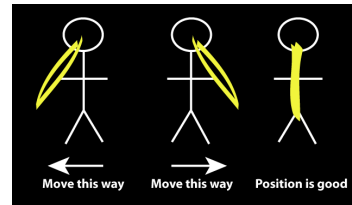


Traveling a Heading at Night

- Work with a partner.
- Send your partner ahead
- Your partner should move to a position along the heading, where they can still see you.
- Your partner should position themselves using a back bearing.

Traveling a Heading at Night

- Final positioning along the heading should be done with light signals.



Bearing & Distance by Projecting a Waypoint



Skills Review

- Plot a UTM coordinate
- Enter a new waypoint into your GPS
- Follow a compass bearing for a given distance
- Plot a bearing on your map
- Take a bearing on an object
- Use a lat/lon coordinate in your GPS


Skills Review

- Solve a Sudoku puzzle
- Think before you act
- Map before you go
- Recognize poison oak
- Work with a partner

A few notes...

- Check out and then back in on the sheet
- Letter Punches & Flag Cards
- False Flags

Online Course Booklet
navgames.org



Login Register

Please register

My Team Found Flag

Team jmc

To get started, indicate that you have found flag 0 with the following link.

[Found Flag #000!](#)

My Team Found Flag

New clues revealed at flag #0

Clues for flag #2
USNG 10S EG 8789 2432 NAD27

Clues for flag #311
From flag #000, proceed on a bearing of 279°T for 128m

Clues for flag #550
From flag #000, proceed on a bearing of 303°M for

Flag #

Control Code

My Team Found Flag

New clues revealed at flag #311

Point marked found!

Clues for flag #617
UTM 877670 E 4124200 N 11000

My Team Found Flag

- Flags Found
- Flags To Find
- Instructions
- logout

Team jmc

You've found 2 flags, with clues for 6 new flags. Thus far teams have found 9 unique points. The most points found by a single team is 4.

[View clues to find new flags](#)

[Enter a newly found flag](#)

UTM from a Sudoku Puzzle #4

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 2 | 1 | 5 | | | | | | 9 | |
| | 4 | 1 | 2 | | | | 5 | 3 | 8 | |
| 6 | 5 | | | 9 | 4 | | | | 7 | |
| 1 | 8 | | | | 6 | 3 | | 9 | 6 | |
| 5 | | | | | | | | 8 | 5 | |
| 4 | 2 | 7 | | | | 1 | | 5 | 4 | |
| | | | 9 | 3 | | | 4 | 6 | 3 | |
| 8 | 9 | | | 4 | 1 | 7 | | 2 | 2 | |
| | | | | | | | 5 | 8 | 9 | 1 |
| A | B | C | D | E | F | G | H | I | | |

Solve the Sudoku Puzzle to fill in the UTM Coordinate.

m E

m N

UTM from a Sudoku Puzzle #4

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 2 | 1 | 5 | | | | 8 | | 9 | | |
| | 4 | 1 | 2 | | | | 5 | 3 | 8 | | |
| 6 | 5 | | | 9 | 4 | | 1 | | 7 | | |
| 1 | 8 | | | | 6 | 3 | | 9 | 6 | | |
| 5 | | | | | | | | 8 | 5 | | |
| 4 | 2 | 7 | | | | 1 | | 5 | 4 | | |
| | | | 9 | 3 | | 5 | 4 | 6 | 3 | | |
| 8 | 9 | | | 4 | 1 | 7 | | 2 | 2 | | |
| | | | | | | | | 5 | 8 | 9 | 1 |
| A | B | C | D | E | F | G | H | I | | | |

Solve the Sudoku Puzzle to fill in the UTM Coordinate.

m E

m N

UTM from a Sudoku Puzzle #4

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 2 | 1 | 5 | | | | 8 | | 9 | | |
| | 4 | 1 | 2 | | | | 5 | 3 | 8 | | |
| 6 | 5 | | | 9 | 4 | | 1 | | 7 | | |
| 1 | 8 | | | | 6 | 3 | | 9 | 6 | | |
| 5 | | | | | | | | 8 | 5 | | |
| 4 | 2 | 7 | | | | 1 | | 5 | 4 | | |
| | | | 9 | 3 | | 5 | 4 | 6 | 3 | | |
| 8 | 9 | | | 4 | 1 | 7 | | 2 | 2 | | |
| | | | | | | | | 5 | 8 | 9 | 1 |
| A | B | C | D | E | F | G | H | I | | | |

Solve the Sudoku Puzzle to fill in the UTM Coordinate.

m E

m N

UTM from a Sudoku Puzzle #4

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 2 | 1 | 5 | | | | 8 | | 9 | | |
| | 4 | 1 | 2 | | | | 5 | 3 | 8 | | |
| 6 | 5 | | | 9 | 4 | | 1 | | 7 | | |
| 1 | 8 | | | | 6 | 3 | | 9 | 6 | | |
| 5 | | | | | | | | 8 | 5 | | |
| 4 | 2 | 7 | | | | 1 | | 5 | 4 | | |
| | | | 9 | 3 | | 5 | 4 | 6 | 3 | | |
| 8 | 9 | | | 4 | 1 | 7 | 3 | 2 | 2 | | |
| | | | | | | | | 5 | 8 | 9 | 1 |
| A | B | C | D | E | F | G | H | I | | | |

Solve the Sudoku Puzzle to fill in the UTM Coordinate.

m E

m N

UTM from a Sudoku Puzzle #4

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 2 | 1 | 5 | | | | 8 | | 9 | | |
| | 4 | 1 | 2 | | | | 5 | 3 | 8 | | |
| 6 | 5 | | | 9 | 4 | | 1 | | 7 | | |
| 1 | 8 | | | | 6 | 3 | | 9 | 6 | | |
| 5 | | | | | | | | 8 | 5 | | |
| 4 | 2 | 7 | | | | 1 | | 5 | 4 | | |
| | | | 9 | 3 | | 5 | 4 | 6 | 3 | | |
| 8 | 9 | | | 4 | 1 | 7 | 3 | 2 | 2 | | |
| | | | | | | | | 5 | 8 | 9 | 1 |
| A | B | C | D | E | F | G | H | I | | | |

Solve the Sudoku Puzzle to fill in the UTM Coordinate.

m E

m N

UTM from a Sudoku Puzzle #4

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 2 | 1 | 5 | | | | 8 | 4 | 9 | | |
| | 4 | 1 | 2 | | | | 5 | 3 | 8 | | |
| 6 | 5 | | | 9 | 4 | | 1 | 7 | 7 | | |
| 1 | 8 | | | | 6 | 3 | | 9 | 6 | | |
| 5 | | | | | | | | 8 | 5 | | |
| 4 | 2 | 7 | | | | 1 | | 5 | 4 | | |
| | | | 9 | 3 | | 5 | 4 | 6 | 3 | | |
| 8 | 9 | | | 4 | 1 | 7 | 3 | 2 | 2 | | |
| | | | | | | | | 5 | 8 | 9 | 1 |
| A | B | C | D | E | F | G | H | I | | | |

Solve the Sudoku Puzzle to fill in the UTM Coordinate.

m E

m N

UTM from a Sudoku Puzzle #4

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 7 | 2 | 1 | 5 | | | | 8 | 4 | 9 |
| | | 4 | 1 | 2 | | | 5 | 3 | 8 |
| 6 | 5 | | 9 | 4 | | 1 | 7 | 7 | |
| 1 | 8 | | | 6 | 3 | | 9 | 6 | |
| 5 | | | | | | | | 5 | |
| 4 | 2 | 7 | | | 1 | | 5 | 4 | |
| | | | 9 | 3 | | 5 | 4 | 6 | |
| 8 | 9 | | 4 | 1 | 7 | 3 | 2 | 2 | |
| 4 | | | | 5 | 8 | 9 | 1 | 1 | |
| A | B | C | D | E | F | G | H | I | |

Solve the Sudoku Puzzle to fill in the UTM Coordinate.

| | | | | | | | | | |
|----|----|----|----|----|----|--|--|--|-----|
| 5 | 8 | 7 | | | | | | | m E |
| G3 | H9 | I7 | C3 | E6 | G7 | | | | |

| | | | | | | | | | |
|----|----|----|----|----|----|----|--|--|-----|
| 4 | 1 | 2 | | | | | | | m N |
| B1 | H7 | I2 | D6 | E5 | A1 | F4 | | | |

UTM from a Sudoku Puzzle #4

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 7 | 2 | 1 | 5 | | | | 8 | 4 | 9 |
| | | 4 | 1 | 2 | | | 5 | 3 | 8 |
| 6 | 5 | | 9 | 4 | | 1 | 7 | 7 | |
| 1 | 8 | | | 6 | 3 | | 9 | 6 | |
| 5 | | | | | | | | 5 | |
| 4 | 2 | 7 | | | 1 | | 5 | 4 | |
| | | | 9 | 3 | | 5 | 4 | 6 | |
| 8 | 9 | 5 | 6 | 4 | 1 | 7 | 3 | 2 | |
| 4 | | | | 5 | 8 | 9 | 1 | 1 | |
| A | B | C | D | E | F | G | H | I | |

Solve the Sudoku Puzzle to fill in the UTM Coordinate.

| | | | | | | | | | |
|----|----|----|----|----|----|--|--|--|-----|
| 5 | 8 | 7 | | | | | | | m E |
| G3 | H9 | I7 | C3 | E6 | G7 | | | | |

| | | | | | | | | | |
|----|----|----|----|----|----|----|--|--|-----|
| 4 | 1 | 2 | | | | | | | m N |
| B1 | H7 | I2 | D6 | E5 | A1 | F4 | | | |

UTM from a Sudoku Puzzle #4

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 7 | 2 | 1 | 5 | 6 | 3 | 9 | 8 | 4 | 9 |
| 9 | 8 | 4 | 1 | 2 | 7 | 6 | 5 | 3 | 8 |
| 6 | 5 | 3 | 8 | 9 | 4 | 2 | 1 | 7 | 7 |
| 1 | 7 | 8 | 4 | 5 | 6 | 3 | 2 | 9 | 6 |
| 5 | 6 | 9 | 3 | 1 | 2 | 4 | 7 | 8 | 5 |
| 4 | 3 | 2 | 7 | 8 | 9 | 1 | 6 | 5 | 4 |
| 2 | 1 | 7 | 9 | 3 | 8 | 5 | 4 | 6 | 3 |
| 8 | 9 | 5 | 6 | 4 | 1 | 7 | 3 | 2 | 2 |
| 3 | 4 | 6 | 2 | 7 | 5 | 8 | 9 | 1 | 1 |
| A | B | C | D | E | F | G | H | I | |

Solve the Sudoku Puzzle to fill in the UTM Coordinate.

| | | | | | | | | | |
|----|----|----|----|----|----|--|--|--|-----|
| 5 | 8 | 7 | 7 | 5 | 2 | | | | m E |
| G3 | H9 | I7 | C3 | E6 | G7 | | | | |

| | | | | | | | | | |
|----|----|----|----|----|----|----|--|--|-----|
| 4 | 1 | 2 | 4 | 1 | 3 | 9 | | | m N |
| B1 | H7 | I2 | D6 | E5 | A1 | F4 | | | |

Campus Orienteering Exercise



Google
Photo
Course
Record

