Instructions

Do the following problems without peeking at the presentation material

Problem (1)

What are the differences between True, Geodetic, Magnetic, Grid, and Astronomic meridians?

Problem (2)

The magnetic bearing of line AB in 1885 was recorded as N58°45’E and the declination was 5°20’ E. What is the true bearing of the line?

Problem (3)

The magnetic bearing of line PQ in 1925 was recorded as S86º35’W. The present true bearing of the line is S79º50’W. What was the declination in 1925?

Problem (4)

The magnetic bearing of line ST in 1963 was recorded as N38º55’W.

The present magnetic bearing of the line is N31º50’W and declination is 3º20’W.

Part (a) What is the true bearing of the line?

Part (b) What was the declination in 1963?

Problem (5)

In 1890:

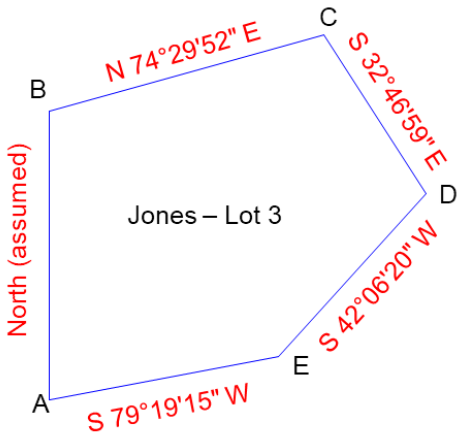
Mag brng of AB = S30º50’E
Mag brng of BC = N85º30’E
Decl = 3º00’E

In 1960

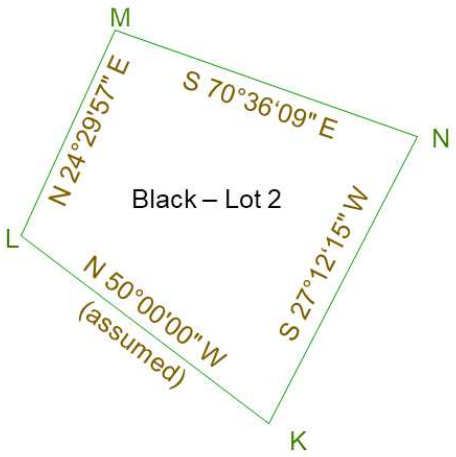
Mag brng AB = S21º10’E
Mag brng BC = ?

Problem (6)

Surveyor Jones surveyed Lot 3. He assumed the direction of one line (AB) as due North. The resulting directions around the Lot are:



Surveyor Black surveyed Lot 2 next door. She assumed the direction of one line (KL) as N50º00’00”W. The resulting directions around the Lot are:



Black’s line ML is the same as Jones’ line DE.

What is the bearing of line BC in Black’s system?

Problem (7)

Following are parts of the NSRS Survey Data Sheets for points *Coyote* and *Hub*.

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NY0860 ***********************************************************************
NY0860  DESIGNATION -  COYOTE
NY0860  PID         -  NY0860
NY0860
NY0860                        *CURRENT SURVEY CONTROL
NY0860  ______________________________________________________________________
NY0860* NAD 83(1991) POSITION- 42 53 32.14293(N) 121 13 08.31133(W)   ADJUSTED
NY0860* NAVD 88 ORTHO HEIGHT -  1883.5   (meters)     6179.    (feet) VERTCON3
NY0860  ______________________________________________________________________
NY0860  GEOID HEIGHT    -        -20.964 (meters)                    GEOID18
NY0860  LAPLACE CORR    -         -2.60  (seconds)                   DEFLEC18
NY0860  HORZ ORDER      -  THIRD
NY0860
NY0860
NY0860. The following values were computed from the NAD 83(1991) position.
NY0860
NY0860;                    North         East     Units Scale Factor Converg.
NY0860;SPC OR S     -   136,394.071 1,441,277.958   MT  0.99990618   -0 29 30.8
NY0860;SPC OR S     -   447,487.11  4,728,602.22   iFT  0.99990618   -0 29 30.8
NY0860;UTM  10      - 4,750,389.397   645,423.523   MT  0.99986017   +1 12 44.7


NY0745 ***********************************************************************
NY0745  DESIGNATION -  NUB
NY0745  PID         -  NY0745
NY0745
NY0745                        *CURRENT SURVEY CONTROL
NY0745  ______________________________________________________________________
NY0745* NAD 83(1991) POSITION- 42 54 54.65414(N) 120 12 50.19067(W)   ADJUSTED
NY0745* NAVD 88 ORTHO HEIGHT -  1572.5   (meters)     5159.    (feet) VERTCON3
NY0745  ______________________________________________________________________
NY0745  GEOID HEIGHT    -        -20.310 (meters)                    GEOID18
NY0745  LAPLACE CORR    -          0.74  (seconds)                   DEFLEC18
NY0745  HORZ ORDER      -  SECOND
NY0745
NY0745. The following values were computed from the NAD 83(1991) position.
NY0745
NY0745;                    North         East     Units Scale Factor Converg.
NY0745;SPC OR S     -   138,727.829 1,523,355.237   MT  0.99990434   +0 11 44.5
NY0745;SPC OR S     -   455,143.80  4,997,884.64   iFT  0.99990434   +0 11 44.5
NY0745;UTM  10      - 4,755,162.200   727,405.773   MT  1.00023624   +1 53 52.4
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Part (a) What is the geodetic azimuth from *Coyote* to *Hub*?

Part (b) The grid bearing in the Oregon S SPC system from *Coyote* to *Davis* is N 56°40’25” W. What is the grid bearing for the line in the UTM Zone 10 system?