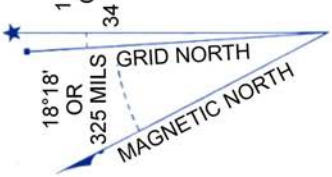
DECLINATION DIAGRAMS

EXAMPLE 1: CALCULATING MAGNETIC DECLINATION



USE DIAGRAM ONLY TO OBTAIN NUMERICAL VALUES
APPROXIMATE MEAN DECLINATION 1975
FOR CENTRE OF MAP
ANNUAL CHANGE DECREASING 1.4'

ONE THOUSAND METRE
UNIVERSAL TRANSVERSE MERCATOR GRID
ZONE 20

Grid Magnetic Angle: 18° 18'

Current Year: 2008 (used for this example)

Year of Declination Information: 1975

Annual Change: decreasing 1.4' (decreasing means 1.4' becomes -1.4')

Grid Magnetic Angle + [(Current Year - Year of Declination Information) x (Annual Change)] = Current Declination

Inputting the information into the formula:

18° 18' + [(2008 - 1975) x (-1.4')] = Current Declination

Solving for current declination.

18° 18' + [(33) x (-1.4')] = Current Declination

18° 18' + [-46.2'] = Current Declination

18° 18' - 46.2' = Current Declination

Note: Since 46.2' cannot be easily subtracted from 18° 18', 1° is converted into 60' (similar to time calculations), which converts 18° 18' to 17° 78'.

17° 78' - 46.2' = Current Declination

17° 31.8' = Current Declination

Since magnetic north is west of grid north and the result is positive, the magnetic declination for the topographical map in 2008 is 17° 31.8' west declination.

Natural Resources Canada, 2008, Topo Declination Diagram. Retrieved April 11, 2008, from http://gsc.nrcan.gc.ca/geomag/field/magdec_e.php?p=1

Figure M-1 Declination Diagram

Unofficial convenience copy of A-CR-CCP-803/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-803-PF-001/A-CR-CCP-803-PF-001.pdf.
Verify against the official publication.

EXAMPLE 2: CALCULATING MAGNETIC DECLINATION

Grid Magnetic Angle: 10° 28'

Current Year: 2008 (used for this example)

Year of Declination Information: 1996

Annual Change: increasing 2.7'

Increasing means 2.7' becomes +2.7'

Inputting the information into the formula:

10° 28' + [(2008 - 1996) x (+2.7')] = Current Declination

Solving for current declination.

10° 28' + [(12) x (+2.7')] = Current Declination

10° 28' + [+32.4'] = Current Declination

10° 28' + 32.4' = Current Declination

10° 60.4' = Current Declination

Note: Since 60.4' is greater than 1°, 60' is converted into 1° (similar to time calculations), which converts 10° 60.4' to 11° 0.4'.

11° 0.4' = Current Declination

Since magnetic north is west of grid north and the result is positive, the magnetic declination for the topographical map in 2008 is 11° 0.4' west declination.

Canada Centre for Mapping, Bancroft 31 F/4, Natural Resources Canada

Figure M-2 Declination Diagram

Unofficial convenience copy of A-CR-CCP-803/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-803-PF-001/A-CR-CCP-803-PF-001.pdf.
Verify against the official publication.