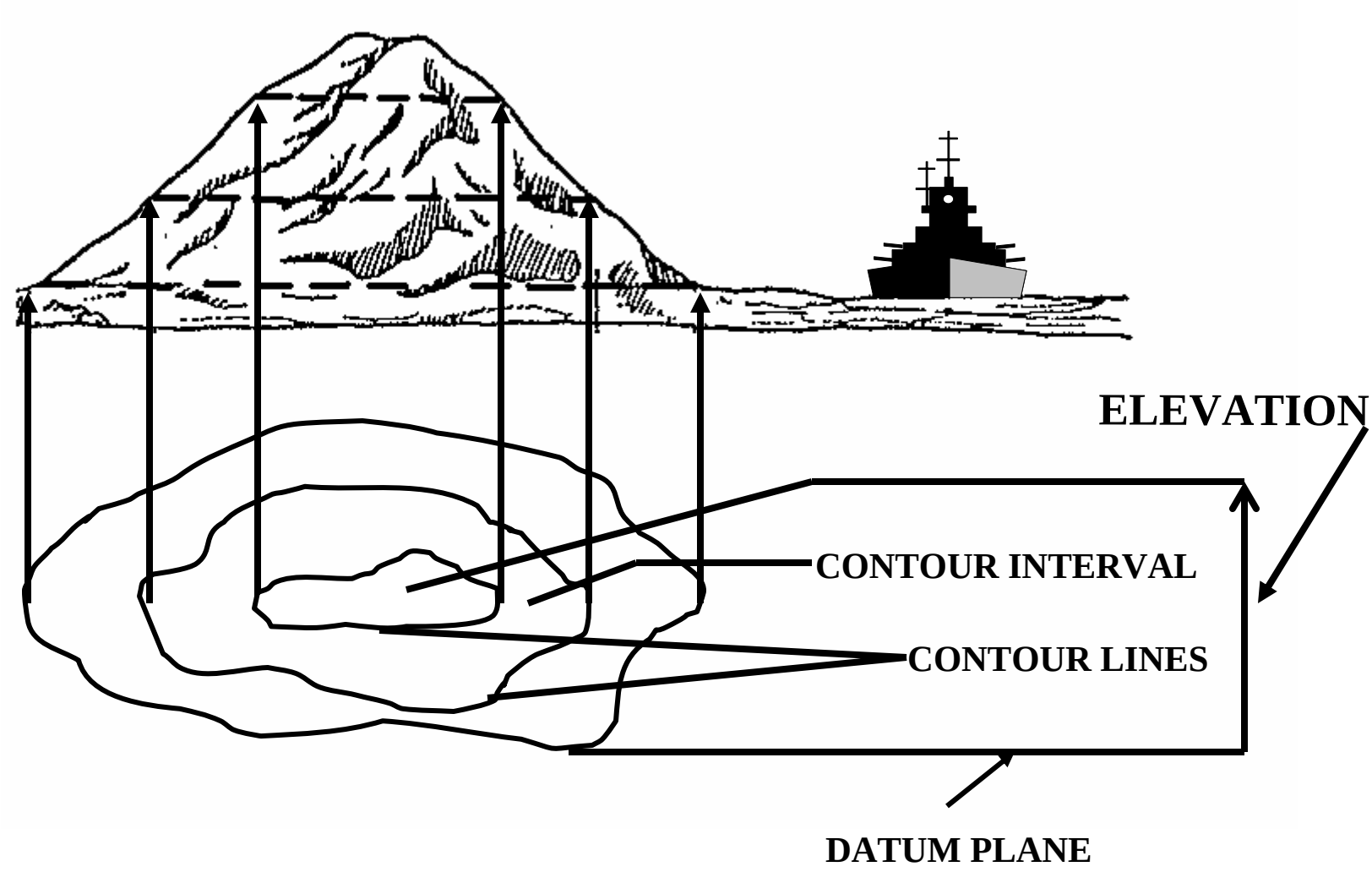
Elevation



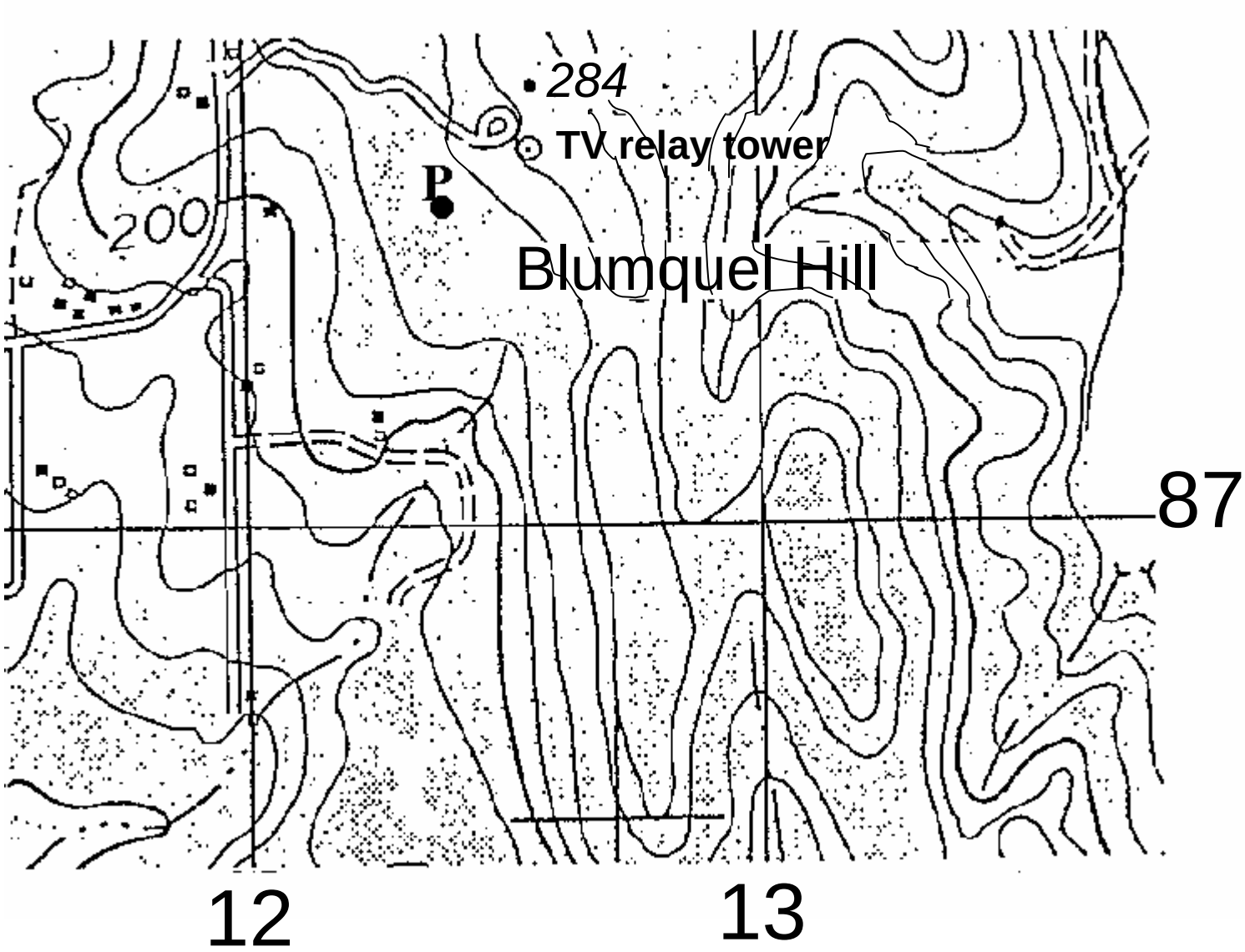
Contour Lines

Index: A thick printed line indexed to show the elevation above and below mean sea level. Every fifth line will normally be an index contour line.

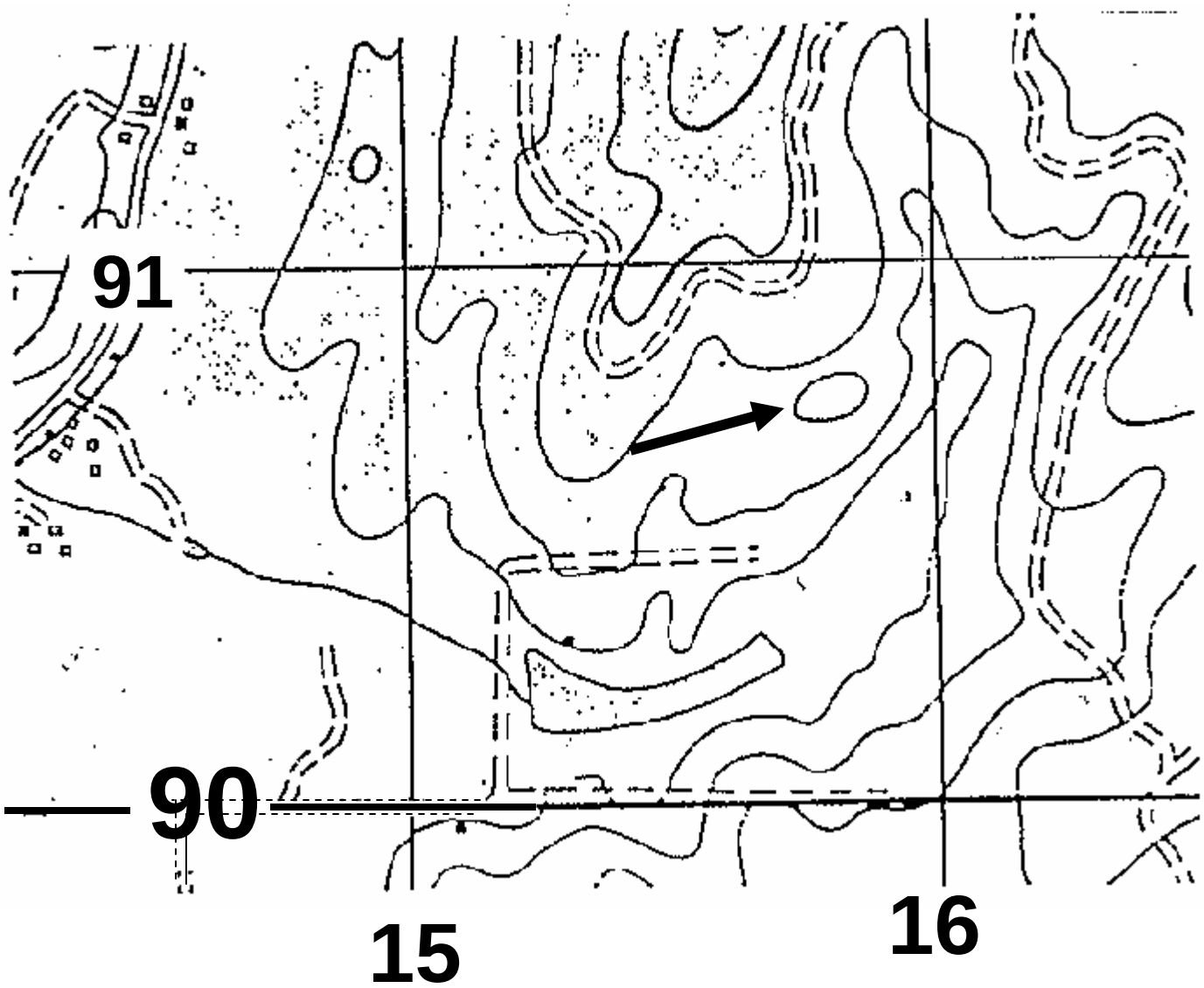
Intermediate: A thin solid line falling between the index contour lines that do not have their elevation given. Normally there are four intermediate lines between index contour lines.

Supplementary: Thin broken lines (dashes) representing changes in elevation at least one-half the contour interval. Normally found where there is very little change in elevation.

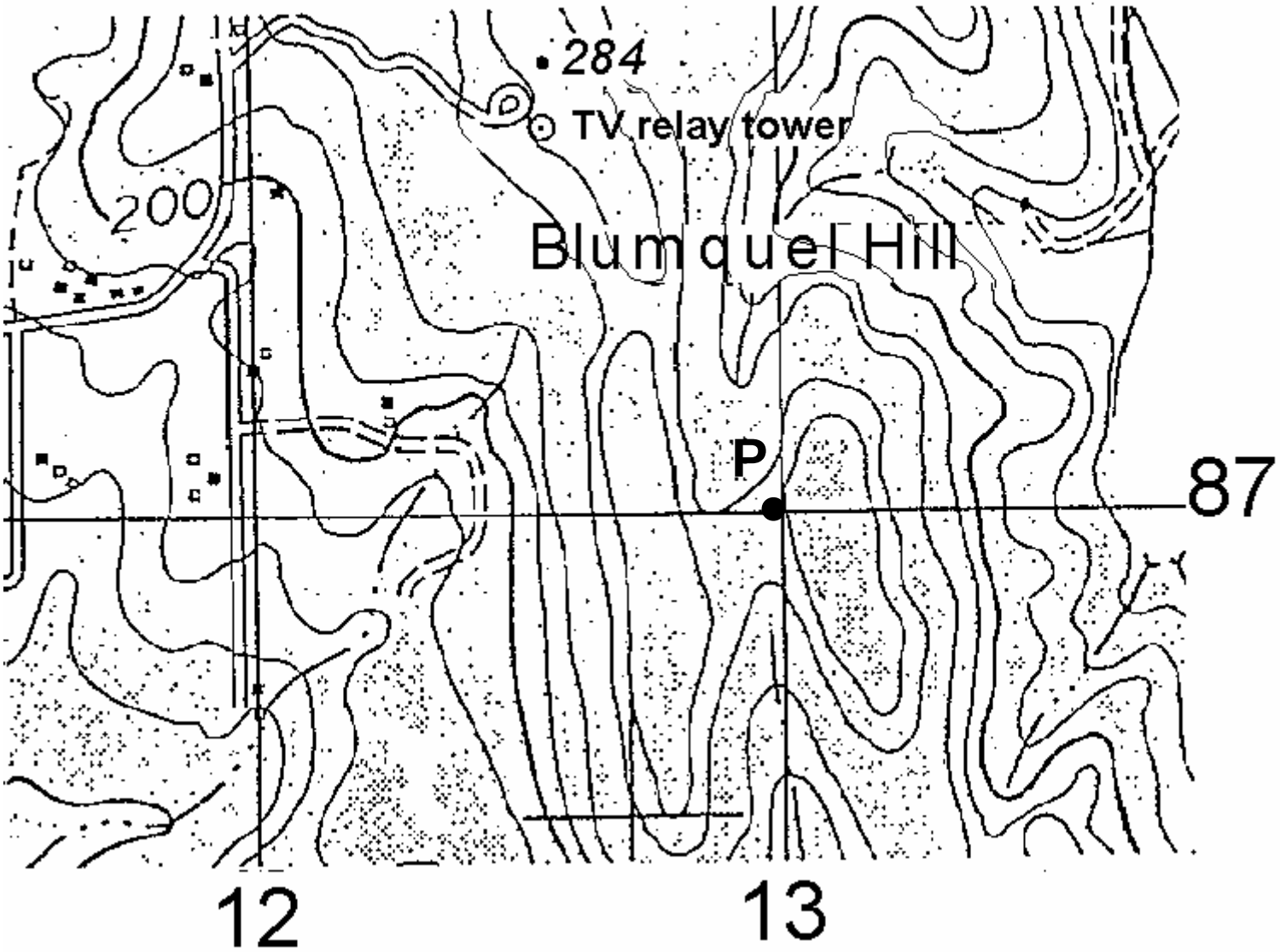
Blumquel Hill A



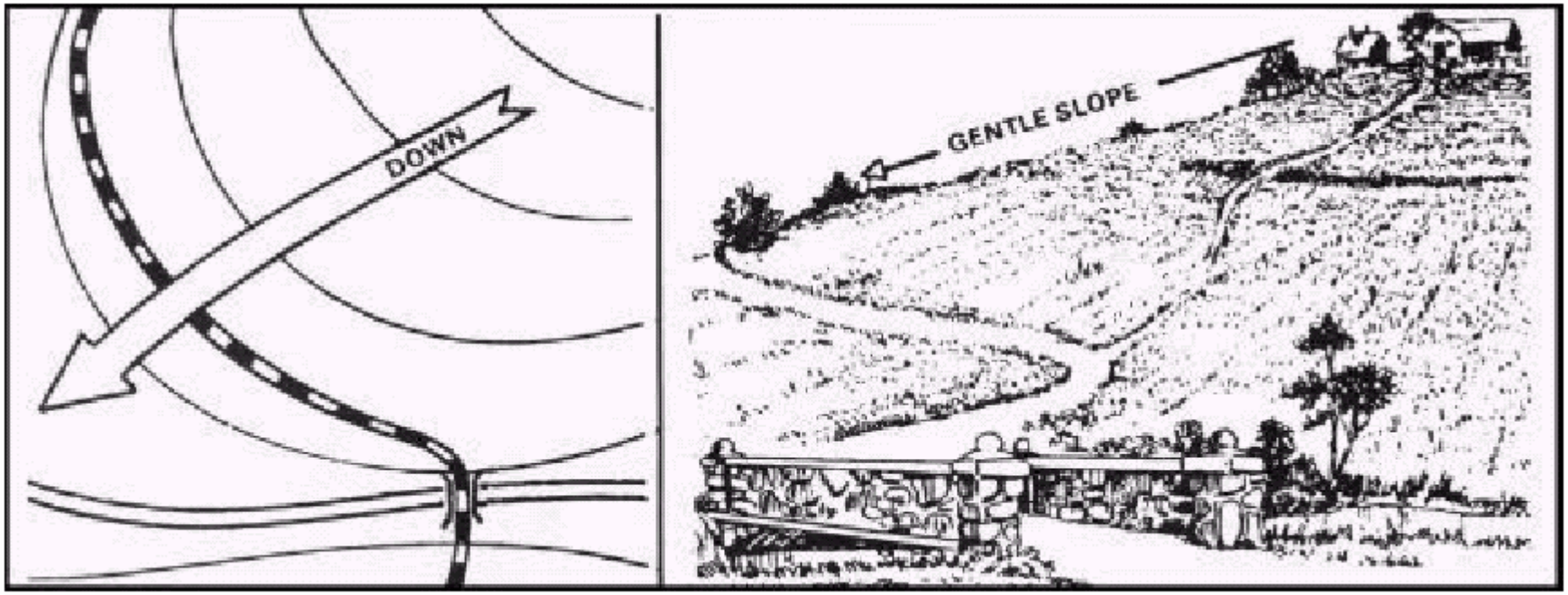
Hilltop



Blumquel Hill B

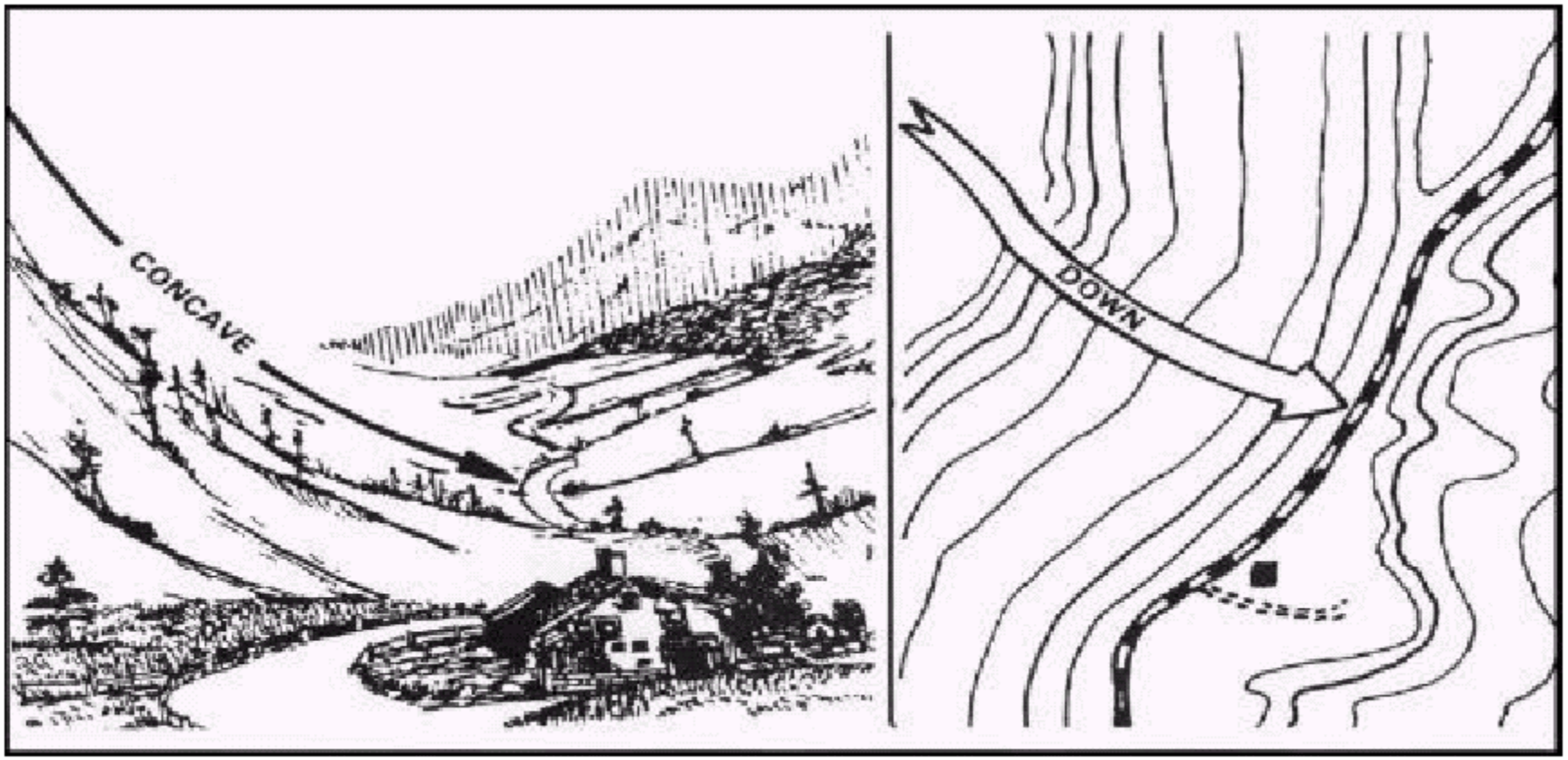


Gentle Slope



Steep Slope

Concave Slope



Convex Slope

Azimuth Circle

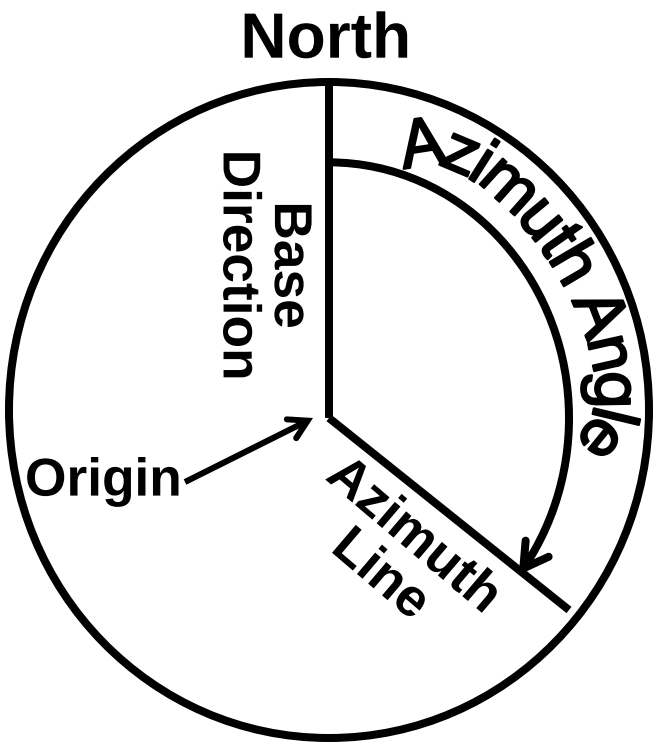


Illustration A

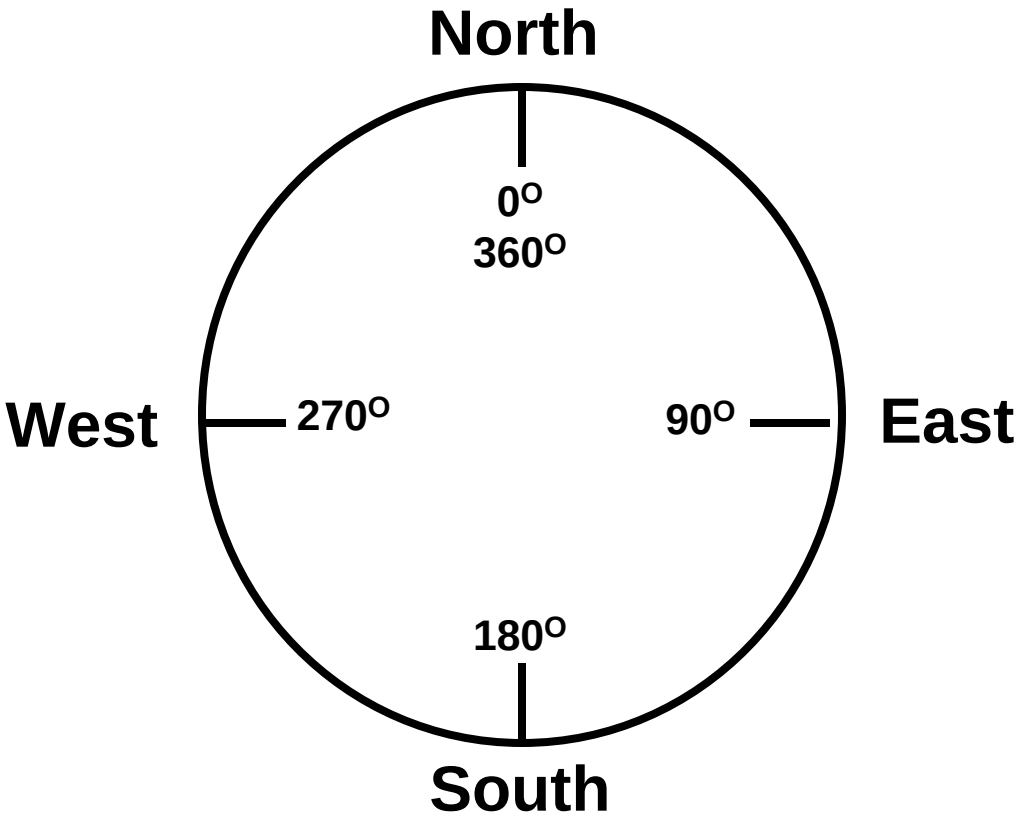
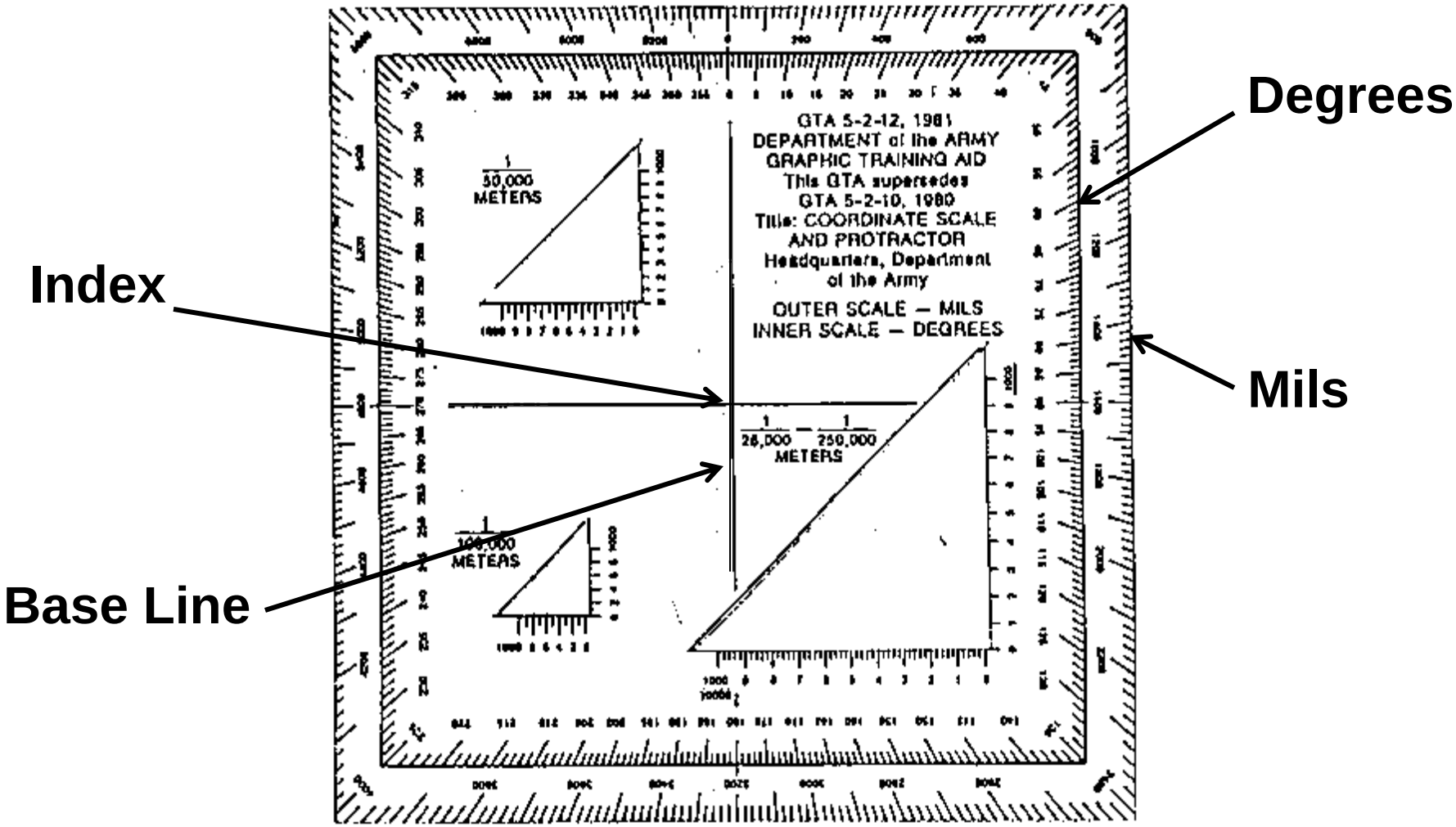
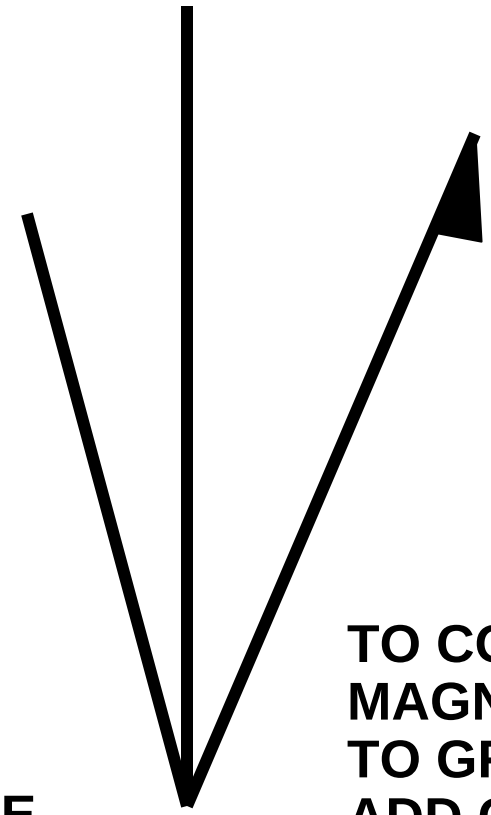


Illustration B

COORDINATE SCALE AND PROTRACTOR



G-M Angle



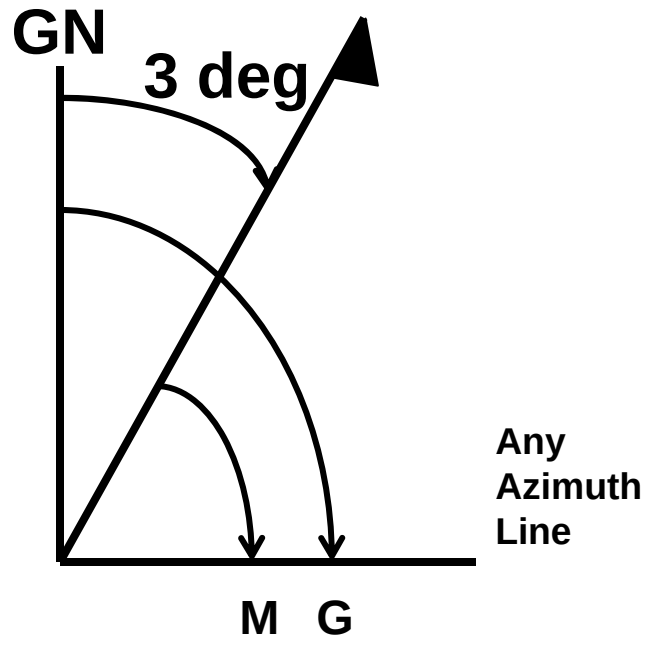
GRID CONVERGENCE
0 DEGREES 5 MINUTES
FOR CENTER OF SHEET

G-M Angle
22 degrees (388 mils)

TO CONVERT A
GRID AZIMUTH TO A
MAGNETIC AZIMUTH
SUBTRACT G-M ANGLE

TO CONVERT A
MAGNETIC AZIMUTH
TO GRID AZIMUTH
ADD G-M ANGLE

Easterly



REQUIREMENT:

Convert these grid azimuths to magnetic azimuths and magnetic azimuths to Grid azimuths.

1. Grid AZ 146 degrees
2. Grid AZ 83 degrees
3. Mag AZ 271 degrees

SOLUTIONS:

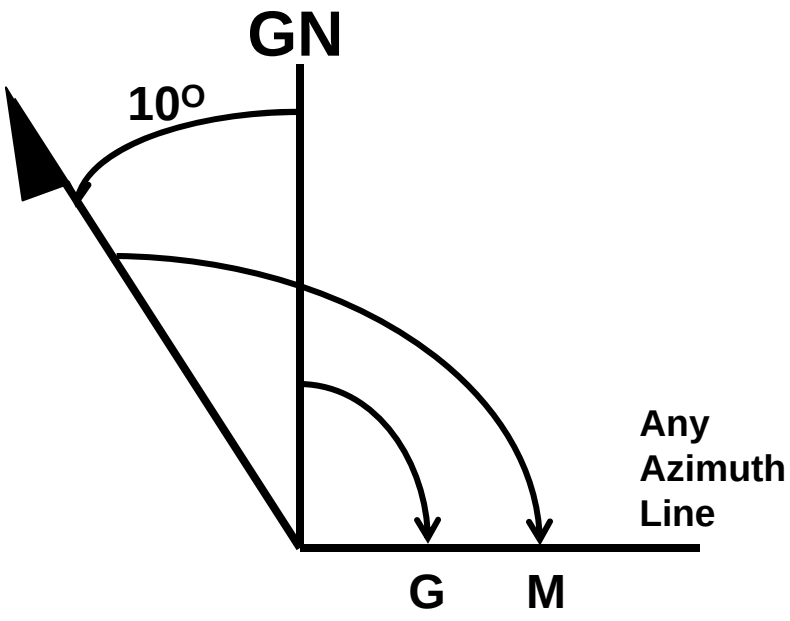
1. Mag AZ 143 degrees
2. Mag AZ 80 degrees
3. Grid AZ 274 degrees

Westerly

REQUIREMENT:

Convert these grid azimuths to magnetic azimuths and magnetic azimuths to grid azimuths.

1. **Mag AZ 54 degrees**
2. **Grid AZ 183 degrees**
3. **Mag AZ 216 degrees**



SOLUTIONS:

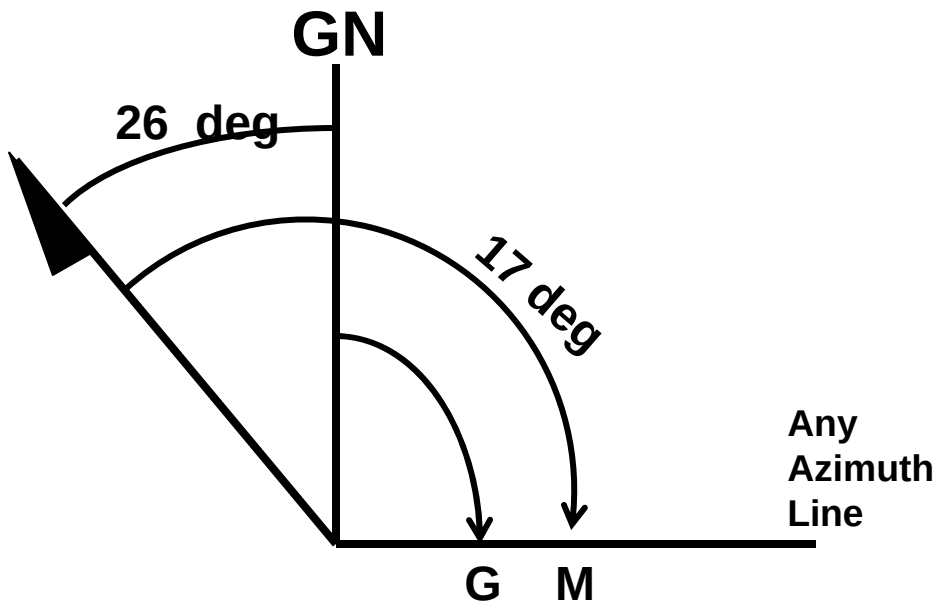
1. **Grid AZ 44 degrees**
2. **Mag AZ 193 degrees**
3. **Grid AZ 206 degrees**

Magnetic Azimuth Smaller than G-M Angle

REQUIREMENT:

Determine the Grid Azimuth of this Magnetic Azimuth.

Mag AZ 17°



SOLUTION:

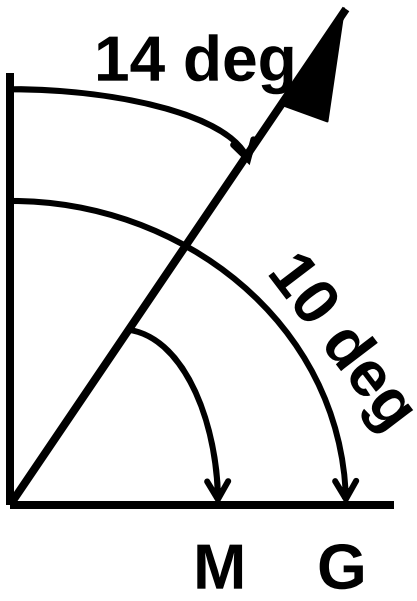
Mag AZ		17 degrees
	+	360 degrees
Total		377 degrees
G-M Angle	–	26 degrees
Grid AZ		351 degrees

Grid Azimuth Smaller than G-M Angle

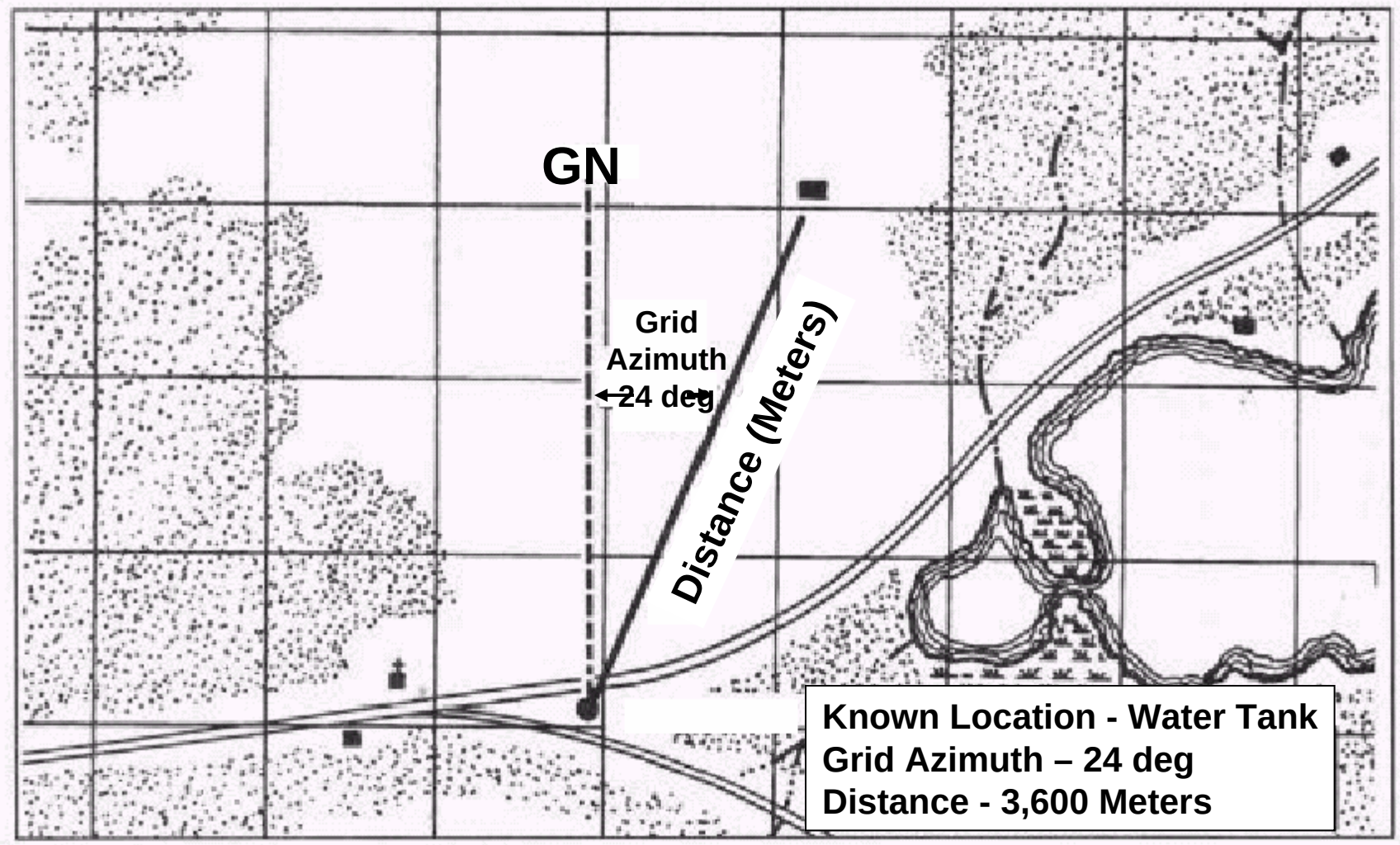
REQUIREMENT:

Determine the magnetic azimuth of this grid azimuth:

Grid AZ 10 degrees



SOLUTION:

Grid AZ	10 degrees
+	360 degrees
Total	370 degrees
Minus G-M Angle	14 degrees
Magnetic AZ	356 degrees

Polar Coordinate