

## DETERMINE THE ELEVATION OF A POINT ON THE GROUND USING A MAP

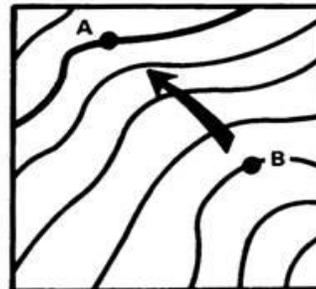
**CONDITIONS:** Given a standard 1:50,000 scale military map, a pencil, and a designated point on the map.

**STANDARDS:** Determine the elevation of the designated point to within half the value of the contour interval.

### PERFORMANCE STEPS

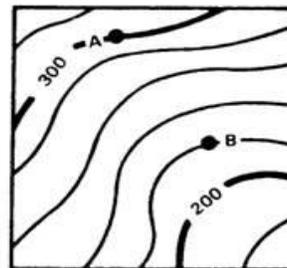
**1. Locate contour lines and contour intervals.**

**a.** The brown lines on the map are called contour lines. Each line shows the height above sea level. Contour lines never cross one another. Printed at the bottom of the map is the contour interval, which is the difference in height (elevation) between one brown line and the one on either side of it. On a map with a scale of 1:50,000, the contour interval is usually 20 meters. This would make Point A 80 meters higher or lower than Point B (**Figure 1**).



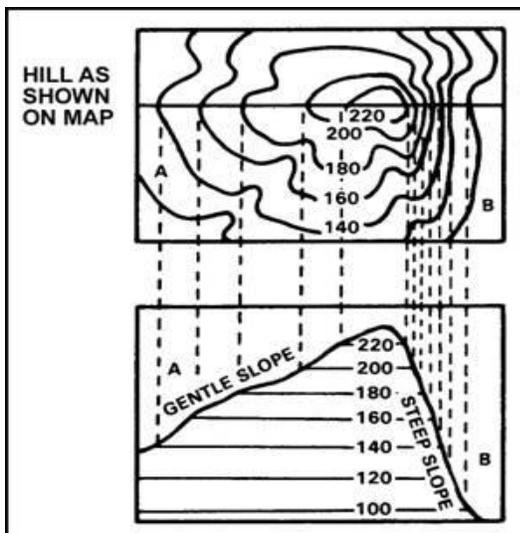
**Figure 1.** Contour lines.

**b.** You can easily tell from the brown lines the direction of uphill or downhill, because every fifth line is heavier and has a number that gives its elevation. Suppose the contour interval is 20 meters. Now you can tell that Point B is 80 meters lower in elevation than Point A. Also, if you know the distance between A and B, you can get an idea of the steepness of the slope (**Figure 2**).



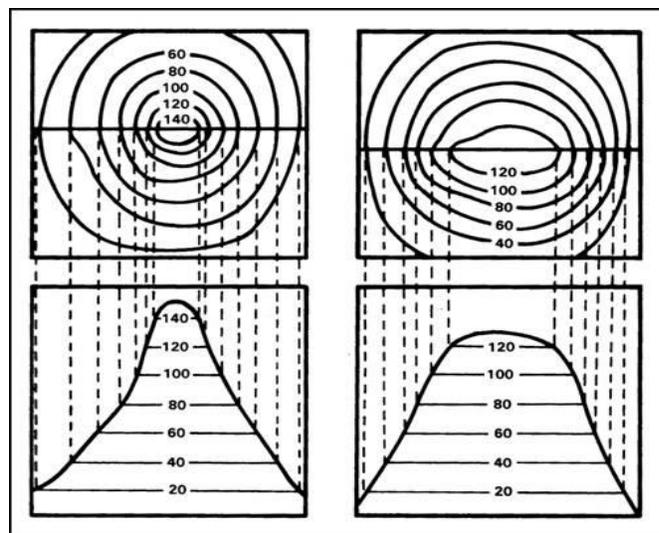
**Figure 2.** Contour intervals.

**c.** Widely spaced contour lines show a gentle slope. Close lines indicate a steep slope (**Figure 3**).



**Figure 3.** Slope.

**d.** Widely spaced contour lines at the top of a hill show a flat hilltop. Close lines indicate a pointed hill (**Figure 4**).



**Figure 4.** Elevation.

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### 2. Determine elevation.

- a. Locate the point on the map. (It may already be plotted on the map, or given as eight-digit coordinates).
- b. Determine the contour interval of the map from the marginal information.
- c. Locate the index contour line nearest the point for which the elevation is being sought.
- d. Count the number of contour lines, up or down, that must be crossed to go from the numbered lines to the point, and note the direction to the point. If the point is on a contour line, its elevation is that of the contour line. For points between contour lines--
  - (1) Points less than one-fourth the distance between lines are considered to be the same as the elevation of the nearest line.
  - (2) Point one-fourth to three-fourths the distance from the lower line are considered to be at an elevation half the contour interval above the lower line.
- e. To estimate the elevation of the top of an unmarked hill, add half the contour interval to the elevation of the highest contour line around the hill.
- f. To estimate the elevation of the bottom of depression, subtract half the contour interval from the elevation of the lowest contour around the depression.
- g. On maps that do not show elevation and relief in as much detail as is needed, use supplementary contour lines. Marginal information indicates the interval. Use the supplementary lines exactly like you would use solid contour lines.

**EVALUATION PREPARATION:** SETUP: Provide the Soldier with a 1:50, 000 scale military map, a designated point on the map labeled "A," and a pencil.

**BRIEF SOLDIER:** Tell the Soldier to determine the elevation of the point that is labeled "A" on the map.

### REFERENCES

REQUIRED	RELATED	LINKS
FM 3-25.26		WWW.TRAININGNCO.COM