

What is a contour map?



KEY TERMS

elevation: distance of a point on the earth above sea level

sea level: average level of the water in the oceans

contour map: a map that shows the elevation and depression of the land

depressions: areas of land where the elevation is lower than the surrounding land

LESSON | What is a contour map?

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There are many different kinds of maps. The maps we use most often are surface maps. A surface map is a drawing. It shows all or part of the earth's surface.

There is one problem with a surface map. It is flat; but the earth's surface is not all flat. It has hills and mountains, plateaus, valleys, and oceans.

The different parts of the earth's surface are at different heights or **elevations**. The elevation of the ocean's surface is zero. This is called **sea level**. The rest of the earth's surface is measured from sea level. So, elevation is measured in meters or feet above (or below) sea level.

How can a flat map show elevation? Or changes in elevation? Some maps use color. Others use shading. However, such maps give only a general idea about the surface.

There is a special kind of map, called a **contour** [KON-toor] **map**. "Contour" means shape. A contour map shows the true shape of the land. It also shows elevations and changes in elevation.

A contour map shows shape and elevation by means of contour lines. A contour line is a line that connects points that are at the same elevation.

- Every point on a given contour line is at the same elevation.
- Several contour lines make up a contour map.
- The difference in elevation between two neighboring contour lines is called the contour interval of the map.
- Contour lines can show how much the land slopes.

Contour lines that are far apart indicate that the land is fairly flat, or has a gentle slope.

Contour lines that are close together show that the land is hilly, or has a steep slope.

A hilltop is enclosed by a single contour line. The exact elevation of a hilltop is shown by a small triangle beside the true elevation of the hill. For example, ▲118 means that elevation of the peak is 118 meters.

WORKING WITH CONTOUR MAPS

Look at the Figures A and B.

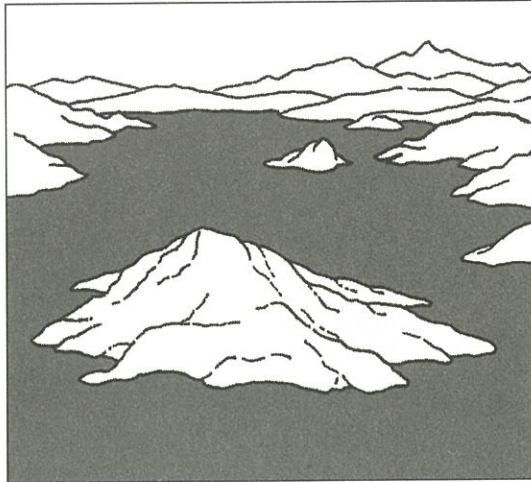


Figure A

Figure A shows an island.

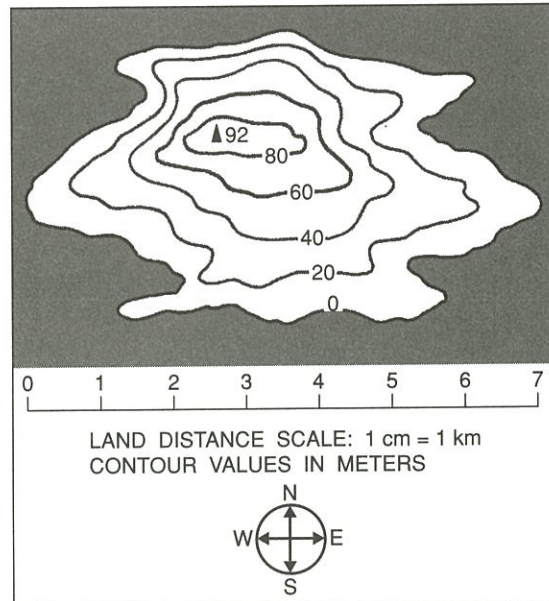


Figure B

Figure B shows a contour map of this island.

Answer the questions below by studying the contour map.

1. How long (top to bottom) is this island? _____ .
2. How wide is this island? _____ .
3. This island starts at sea level. How do you know? (Look only at the contour map.)
_____ .
4. What is the contour interval of this map? _____ .
5. Which side of the island has the steepest slope? _____ .
north, south, east, west
6. How do you know? _____ .
7. Which side of the island has the gentlest slope? _____ .
north, south, east, west
8. How do you know? _____ .
9. How high is the peak of this island? _____ .

Compare the drawing of the island in Figure A with the contour map in Figure B.

10. Which one gives more information? _____

11. Which one is more accurate? _____

12. Which one is more useful? _____

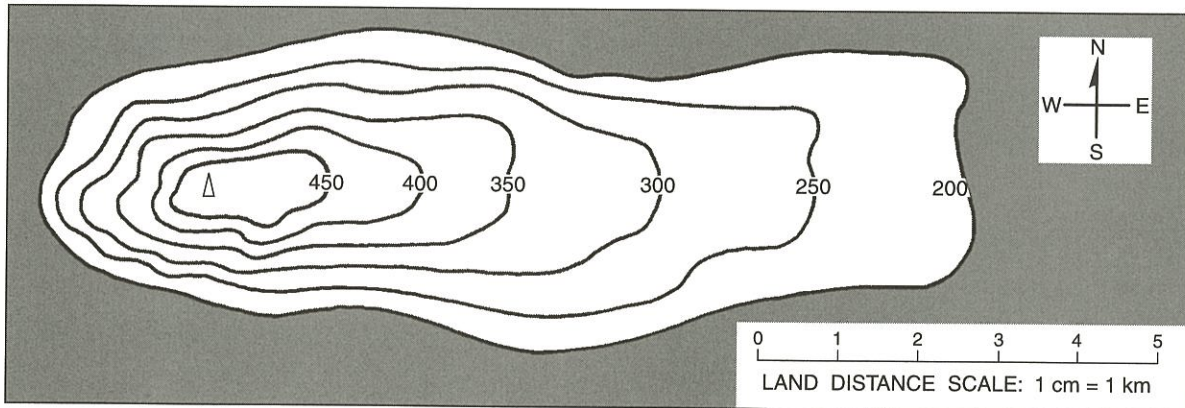


Figure C

Let's try another. By compass direction . . .

1. The _____ side of this landform has the steepest slope.
2. The _____ side of this landform has the gentlest slope.
3. The contour interval of this map is _____ meters.
4. The lowest elevation shown is _____ meters.
5. Which of these heights could be the exact elevation of the peak?
a) 520 meters b) 420 meters c) 475 meters
6. Does this landform start at sea level? _____ How do you know?

SOMETHING EXTRA

You can learn more from a contour map than just the shape and slope of the land. Contour maps also tell you something about streams. And about "dips," or **depressions**, in the land.

STREAMS

The head of a stream is the place where it starts. The place where it ends, in a lake or ocean is called the mouth. Look at Figure D. Can you find a stream?

What letter is at

1. the head of the stream? _____
2. the mouth of the stream? _____
3. Everyone knows that water flows _____ .
uphill, downhill
4. In other words, water flows from a _____ elevation to a _____
elevation. higher, lower higher, lower
5. At a stream, contour lines seem to form "arrows." Each "arrow" points toward the
_____ of the stream, _____. This is _____ the
head, mouth upstream, downstream toward, away from
direction of flow.

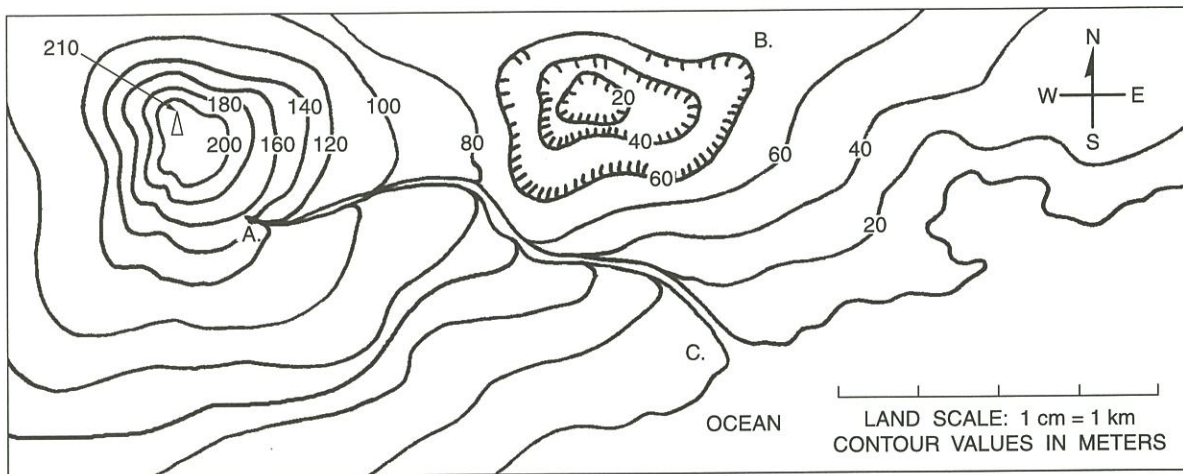
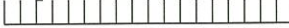


Figure D

DEPRESSIONS

Sometimes a bowl-like dip or depression occurs on a fairly flat surface. These are shown by special contour lines called depression contours. A depression contour is shaded, or hachured, on one side, like this . The hachures point down into the depression.

Depression contours are just like regular contour lines. They show the shape of the depression. They also show the slope of the sides of the depression.

Look at the depression beside letter **B** on the map above.

1. The elevation at the top of the depression is _____ meters.
2. The _____ side of the depression has the steepest slope.
north, south, east, west
3. Which of these could be the exact elevation at the bottom of the depression?
 - a) 40 meters
 - b) 20 meters
 - c) 10 meters

FILL IN THE BLANK

Complete each statement using a term or terms from the list below. Write your answers in the spaces provided.

steep
contour lines
zero (0)
sea level

contour map
gentle
contour interval

depression contours
elevation
hachures

1. A map that accurately shows the shape and changing elevations of the land is called a _____ .
2. The height of a location is called its _____ .
3. Contour maps use _____ to show shape and elevation.
4. The difference in elevation between two neighboring contour lines is called the _____ .
5. All elevations are measured from _____ .
6. The number value of sea level is _____ .
7. Contour lines that are close together indicate a _____ slope.
8. Contour lines that are far apart indicate a _____ slope.
9. Dips in a fairly flat surface are shown by _____ .
10. The shading marks on a depression contour are called _____ .

MATCHING

Match each term in Column A with its description in Column B. Write the correct letter in the space provided.

	Column A	Column B
_____	1. depression contours	a) height above sea level
_____	2. elevation	b) show dips in a flat surface
_____	3. contour interval	c) has zero elevation
_____	4. mouth	d) difference between two neighboring contour lines
_____	5. sea level	e) where a stream ends