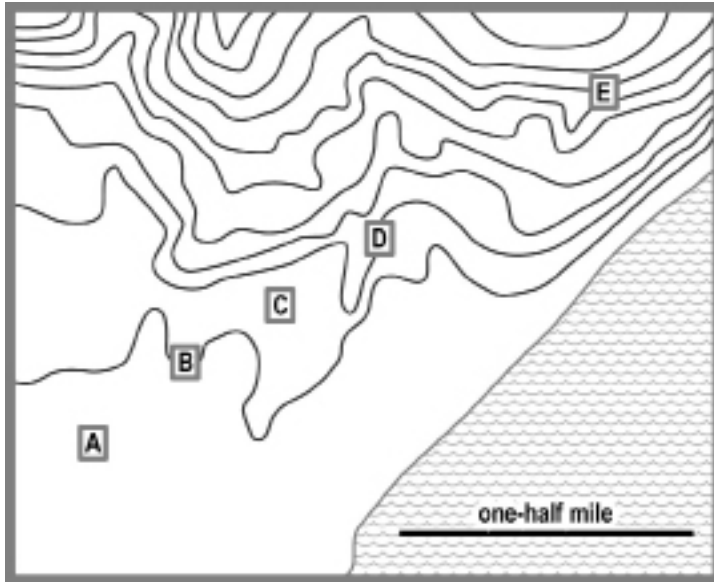


Hurricane Impact: Storm Surges and Elevation Transitions

One reason why people are often hurt or killed by a hurricane is that they are not aware of the danger at a particular place. It helps to compare the predicted height of the storm surge with the transition in elevation - a map or graph that shows how fast the land rises as you go inland from the water's edge.



Category	Wind mph	Surge Ft.
1	74-95	5
2	96-110	6-8
3	111-130	9-12
4	131-155	13-18
5	156+	19+

This map uses contour lines to show the elevation of the land above mean sea level. Each line traces a particular elevation; it separates areas that are higher than that elevation from areas that are lower. The lines on this map are ten feet apart; that means that the line that is closest to the shore indicates ten feet above sea level. The next line going inland shows 20 feet above sea level, and so forth (unless the ten-foot line curves around a hill and shows that you are going back down across the ten-foot level).

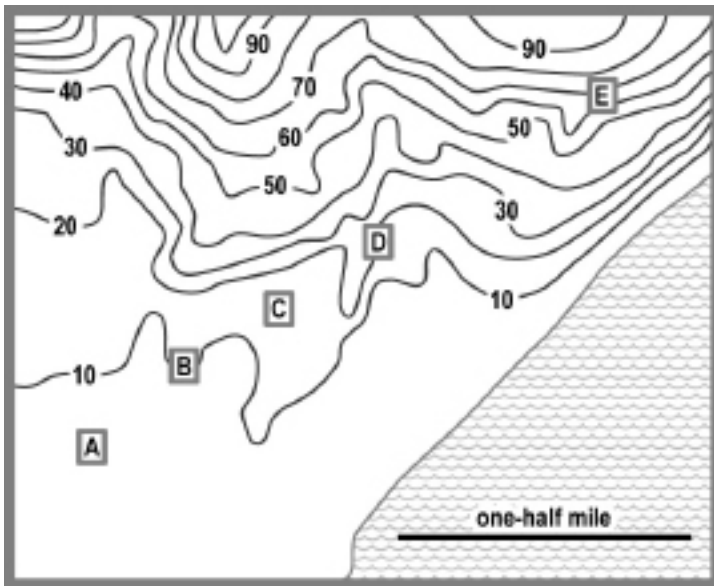
Please answer the following questions.

- What is a reasonable estimate of the elevation of place D on the map?
5 feet 10 feet 15 feet 20 feet 25 feet
- What is a reasonable estimate of the elevation of place C on the map?
5 feet 10 feet 15 feet 20 feet 25 feet
- Which of these places on the map is higher above sea level?
place B place D place E
- Where does the land go uphill faster?
from the shore to place C from the shore to place E
- If a category-4 hurricane hit this area, what does the table above shows as the approximate height of the storm surge (the increase in sea level due to the hurricane winds)?
5 feet 10 feet 15 feet 20 feet
- Which places on the map might be flooded by this storm surge (circle all that apply)?
place A place B place C place D place E

Show this on the map by using a blue marker to shade all the areas that might be flooded.

Hurricane Impact: Storm Surges and Elevation Transitions

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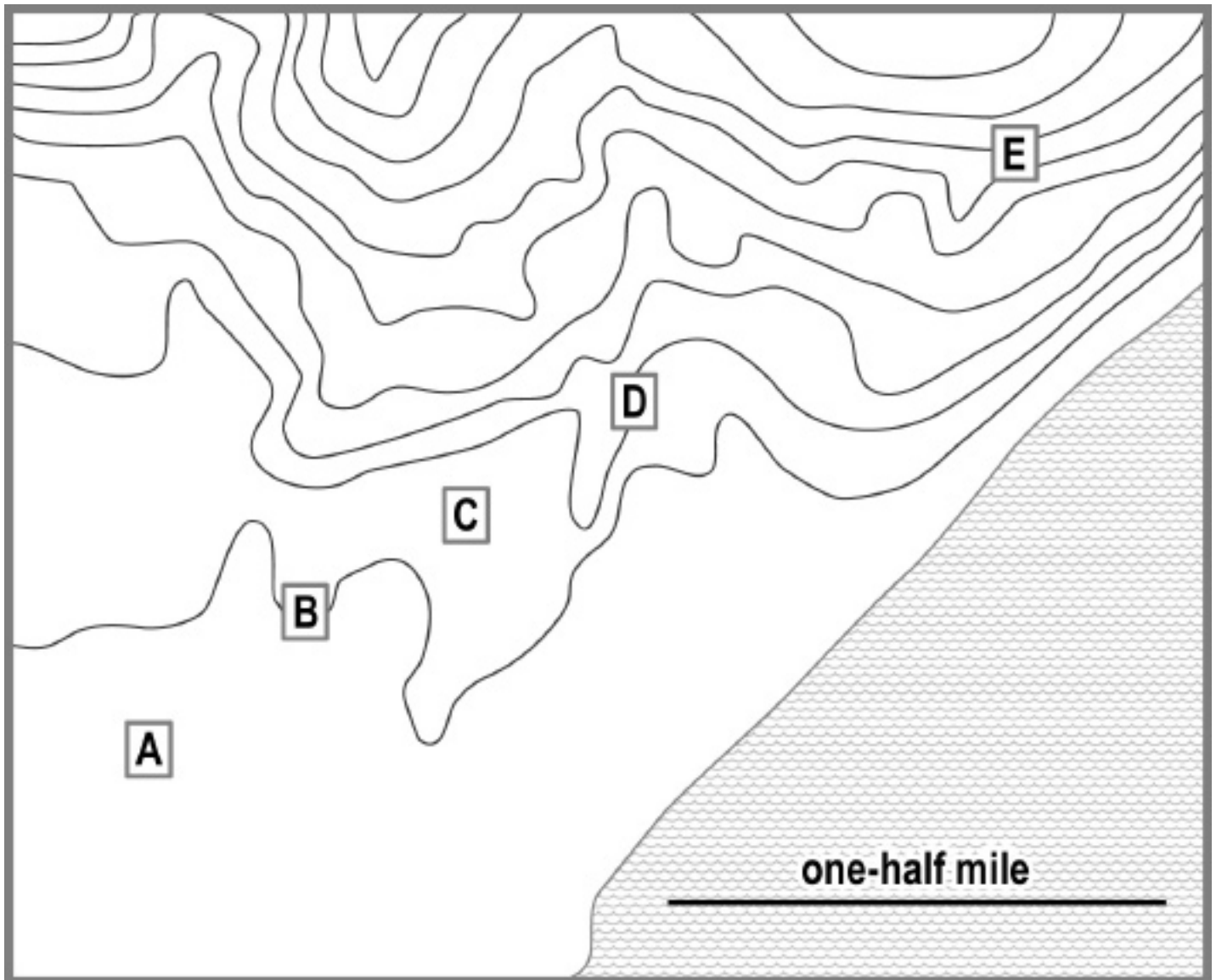
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Please answer the following questions.

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place A place B place C place D place E

Show this on the map by using a blue marker to shade all the areas that might be flooded.

Hurricane Impact: Storm Surges and Elevation Transitions

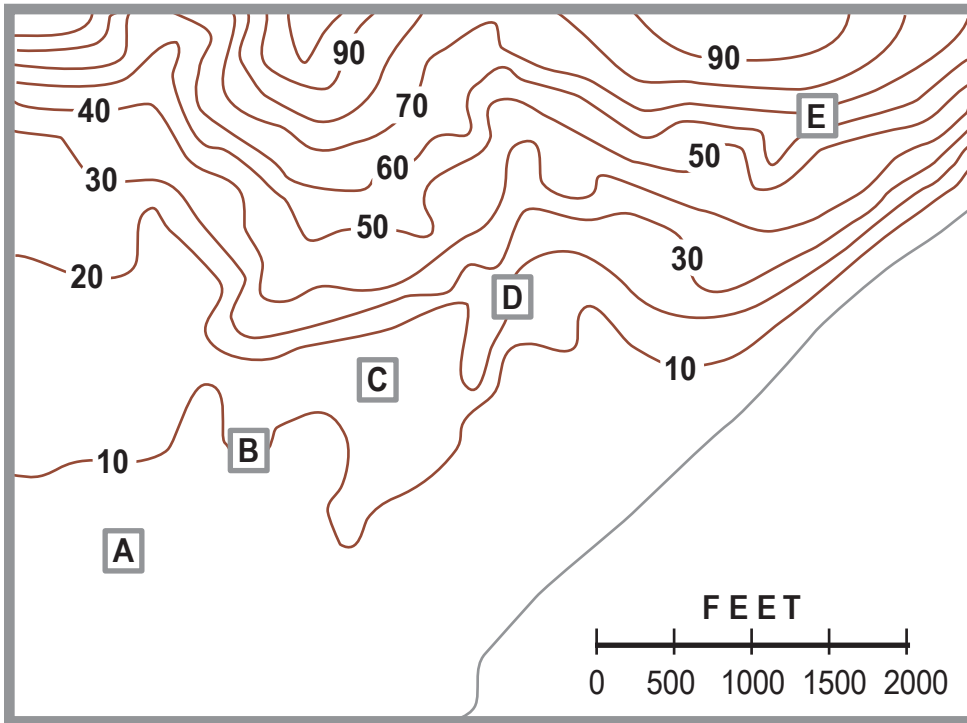


This map uses contour lines to show the elevation of the land above mean sea level. Each line traces a particular elevation; it separates areas that are higher than that elevation from areas that are lower. The lines on this map are ten feet apart; that means that the line that is closest to the shore indicates ten feet above sea level. The next line going inland shows 20 feet above sea level, and so forth (unless the ten-foot line curves around a hill and shows that you are going back down across the ten-foot level).

- Which place has the fastest increase in elevation as you go inland from the shore?
 from shore to place A from shore to place D from shore to place E
- Which places on the map might be flooded by the storm surge and waves of a category-3 hurricane (the estimated storm surge is 10 feet above mean sea level; waves might go another five feet higher)
 Circle all that might be flooded: place A place B place C place D place E

Show this on the map by using a blue marker to shade all the areas that might be flooded.

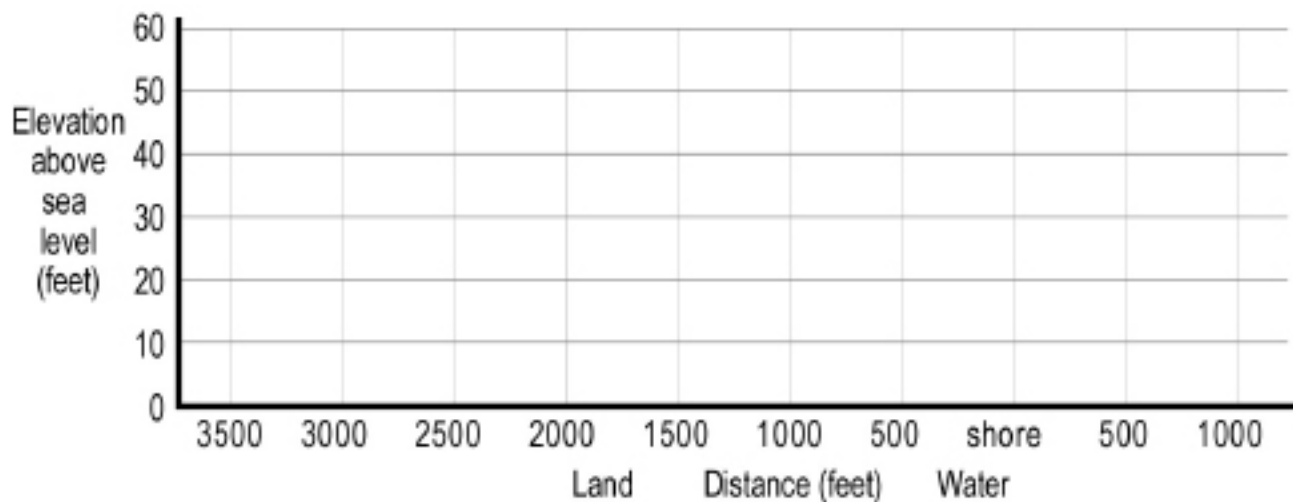
Making a Side Profile of the Land



Category	Wind mph	Surge Ft.
1	74-95	5
2	96-110	6-8
3	111-130	9-12
4	131-155	13-18
5	156+	19+

This map uses contour lines to show the shape of the land. The numbers on the contours indicate elevation in feet above mean sea level.

- 1) Choose and draw an interesting transect (a straight line that runs inland from a point on the shore) on the map above.
- 2) Measure the distance along your transect from the shore to a place where the elevation is known (such as where the transect crosses a contour line).
- 3) Put a dot on the graph at the appropriate elevation and distance from shore to represent the point on your transect.
- 4) Repeat this process for every place where your transect crosses a contour line.
- 5) Connect the dots with a line; this line shows the general shape of the land as seen from the side.
- 6) Finally, draw a horizontal line to show the height of the water during a hurricane storm surge.



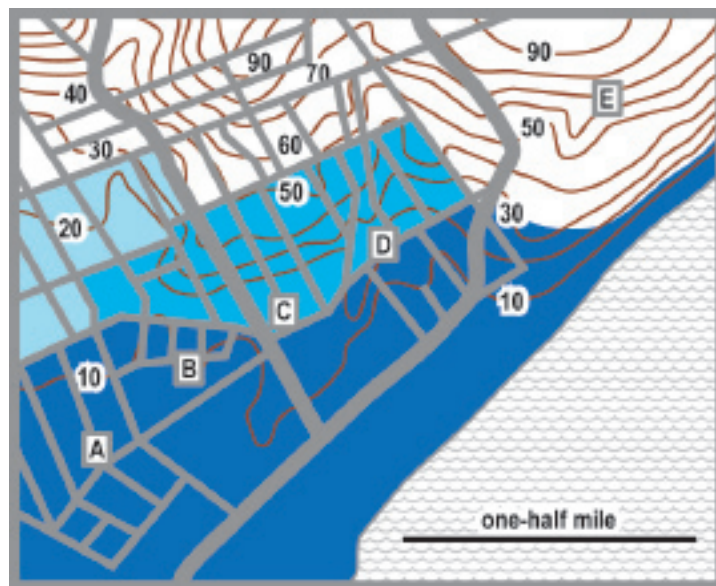
Hurricane Impact: Storm Surges and Elevation Transitions

This map includes the present-day streets, according to a modern map. The pattern of streets is different on maps from different sources. That is a common problem when you download maps from various web sources. Some maps are based on satellite images. Others are based on maps or records from the Census Bureau.

Regardless of the source, one thing is clear: some streets have been built on land that is subject to flooding during even a moderate hurricane.



The Office of Emergency Management of New York City has a website that shows officially defined hurricane evacuation zones. The dark color indicates areas that city officials expect will be flooded by any hurricane; lighter colors show areas flooded by more intense Category 2 and 3 hurricanes.



www.nyc.gov/oem/html/home/home.shtml and click Hurricane Zone Finder