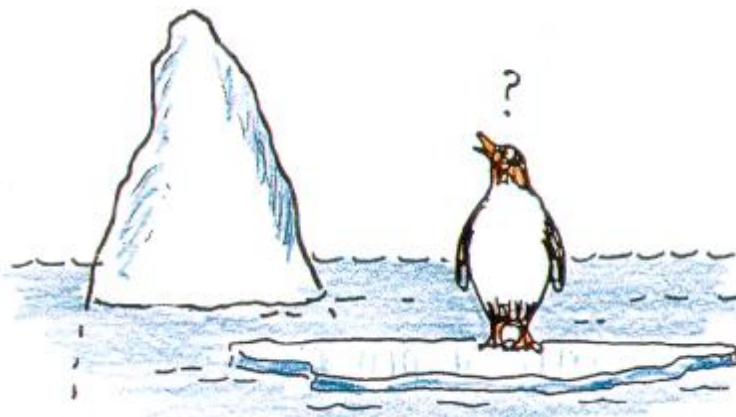


NEXT-TIME QUESTION

Suppose that the part of an iceberg that extends above the water were suddenly removed. If this occurred, the



- a) center of mass of the iceberg would sink slightly.
- b) buoyant force on the iceberg would decrease.
- c) density of the iceberg would slightly decrease.
- d) pressure at the bottom of the iceberg would increase.
- e) Two of these answers are correct.
- f) All are incorrect.



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Answer: b

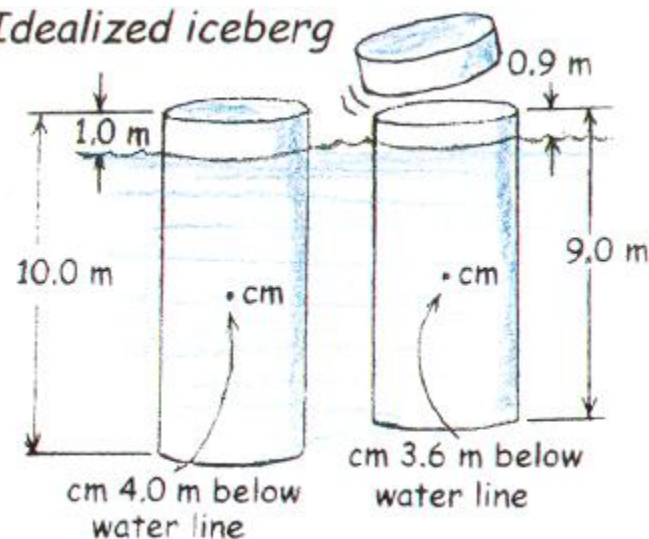
The weight of the iceberg would be less when its top is removed. Less weight means less weight of water displaced, which means less buoyant force. The top of the new iceberg sticks up less above the water, but the center of mass rises, and the bottom is less deep, which means less pressure against the bottom, not more. Density remains the same, for the iceberg has the same composition.

For any object, the buoyant force is the weight of water displaced. For a *floating* object, the buoyant force is the weight of the object.

Does the water level change if the iceberg melts?



Idealized iceberg



Hewitt
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