The pictures shown represent the geographic location of a vessel and the radar presentation at the same time. Which statement is TRUE?

A. Ship No. 1 does not paint as an individual target due to the side lobe affect.
Incorrect: Side lobe effects are readily recognized by the production of multiple series of echoes on each side of the main lobe echo at the same range as the main lobe echo. Semicircles or sometimes complete circles may be produced. An example of side lobe effect may come from receiving a strong echo from passing another vessel at close range. Ship 1 does not paint as an individual target due to beam width distortion.

B. The small island is not detected due to the limitation caused by the pulse length.
Incorrect: The small island is not detected due to the "shadow" created by the mountain directly astern of the vessel and is not a limitation caused by the pulse length. The radar paints the prominent mountain on the radar screen and no other targets that may lie in its "shadows".

C. A tangent bearing of the headland to the south-southeast is corrected by subtracting one-half of the beam width.
Incorrect: Fixes by tangent bearings is one of the least accurate methods of navigation. Tangent bearings are inaccurate due to beam width distortion and must be corrected using an estimate of one-half the horizontal beam width. Since the tangent bearing to the headland to the south-southeast is a left tangent bearing then the correction of one-half the beam width must be added not subtracted.

D. Ship No. 2 is not detected due to the combined affects of beam width and pulse length.
Correct: Ship No. 2 is painted as a "bump" in the landmass on the radar screen. This is due to a combination of beam width and pulse length distortion. Because of beam width distortion a shoreline that is straight or nearly straight will often appear as crescent shape on the radar screen with the distortion increasing as the beam width increases. Conversely, the ability of radar to separate targets close together at the same range is called *resolution in range* which is related primarily to pulse length. The minimum distance between targets that can be separated is half of the pulse length. If the distance between the two targets is less than half of the pulse length the two targets will be combined as one target on the radar screen.