Navigation Quiz

You & four friends (Tom, Bob, Don & Rick) are on a cruise ship. Each of you brought along your marine sextants, 2018 Nautical Almanacs, Texas Instruments Voyage 200 calculators and plotting materials to practice your celestial navigation skills. On August 17th 2018 just before sun set you spot a small island to the North West of your position. At 19:20:00 GMT using your sextant to measure the altitude of the Moon's lower limb, you find the sextant altitude to be 75° 18.5'. At the same time Tom measures the altitude for Antares and gets a sextant altitude of 71° 22.4', Bob obtains a sextant altitude for Rigel Kentarus of 35° 22.7', Don obtains a sextant altitude for Altar of 31° 37.9' & Rick obtains a sextant altitude for Arcturus of 51° 25.2'. Previously you had determined the upper observation deck of the cruise ship to be 88 feet above the water line. Your sextant's index correction, IC= -1.6', Tom's IC= -1.8', Bob's IC= -0.3', Don's IC= -0.4' & Rick's IC= -2.1'. The air temperature is 31°C & the pressure is 1005mb**.**

Nautical Almanac **data for August 17th 2018 for GMT = 19:00:00**

Moon GHA =23° 32.8' *v*=12.2 Dec 12° 24.1' S *d*=9.2 HP=56.3' Moon's declination is increasing with time

Aries GHA=251° 06.2'

Altar	SHA=062° 04.5'	Dec=08° 55.3' N
Antares	SHA=112° 21.9'	Dec=26° 28.2' S
Arcturus	SHA=145° 52.7'	Dec=19° 05.5' N
Rigel Kentarus	SHA=139° 47.1'	Dec=60° 54.7' S

For the Moon what is Total GHA_____ , Dec _____, Ho_____

For the Altar what is Total GHA_____ , Dec _____, Ho_____

For the Antares what is Total GHA_____ , Dec _____, Ho_____

For the Arcturus what is Total GHA_____ , Dec _____, Ho_____

For the Rigel Kentarus what is Total GHA_____ , Dec _____, Ho_____

Which bodies provide the best 2 body fix? _____, _____

Which bodies provide the best 3 body fix? _____, _____, _____

What was your latitude & longitude @ 19:20:00 GMT for the 2 body fix? _____, _____

What was your latitude & longitude @ 19:20:00 GMT for the 3 body fix? _____, _____

What was your latitude & longitude @ 19:20:00 GMT for a 5 body fix using the method for determining position from intercept and azimuth by calculation? _____,_____

(See Nautical Almanac Page 282 paragraph 11)

What island did you spot to the North West just prior to sun set? _____