March 1999

Question 1

a) The recommended route is through the one and a half-degree channel. Since this route is in low latitudes, the saving using a Great circle is small. Use Mercator Sailing.

c)

Departure	6° 56' N	MP	414.19		79° 50' E
Point J	1° 35' N	MP	94.37		73° 40' E
Dlat	5° 21'S	DMP	319.82	dlong	06°10' W

Tan co = $\frac{\text{dlong}}{\text{DMP}} = \frac{370}{319.82}$ = S 49° 09.'6 W

Dist = $\frac{\text{dlat}}{\text{Cos Co}} = \frac{321}{\cos 49° 09.'6}$ = 490.8

From J	1° 35' N	MP	94.37		73° 40' E
Mahe	4° 35' S	MP	273.42		55° 30' E
Dlat	6° 10'	DMP	367.79	dlong	18° 10' W

Tan co = $\frac{1090}{367.79}$ = S 71°21.'3 W

Dist = $\frac{370}{\cos 71° 21.'3}$ = 1157.3

Total Distance = 490.8 + 1157.3
= 1648.1 miles

Question 3
(See attached plot)

a)	019°(T)		
b)	38°40'N	70°42' W	
c)	R/V at	2100 GMT	
	S.S.	2345 GMT	1902 LMT
	Daylight	2h 45m	

Method.

Find the course the Pirated vessel is steering towards Atlantic City by Plane Sailing. Find the approach line for the USCG vessel also by plane sailing. Plot these on the graph paper. Pick a time interval, run the pirated vessel for this time interval. Find how far the USCG vessel could steam in this time. Arc back this distance from the pirated vessels DR and this will be the course to steer. Find either by calculation, or by plotting where the pirated vessel will be at the time of Rendezvous. Calculate the time of Sunset at this position.

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To illustrate Question 3.