

158. Required the natural whole number corresponding to the log. 5.805437.

159. Required the length of a degree of longitude on the parallel of Cape Farewell in lat. $59^{\circ} 49' 12''$ N.

160. Oct. 7, 1858, in longitude $66^{\circ} 40'$ E. the observed meridian alt. of Procyon (a con. min) was $55^{\circ} 35'$ observer south of star—eye 21 feet, index error $+ 2' 15''$ Required the latitude.

161. A ship from lat. $34^{\circ} 20'$ S. running in the south east quarter for 24 hours found her difference of lat. and difference of long. were equal. Required the course steered.

162. Nov. 18, 1858, (astronomical time) in lat. $48^{\circ} 22'$ N. and long. $52^{\circ} 20'$ W. what will be the ap. time at place when the moon bears due west.

163. April 2, 1858, in lat. by account $30^{\circ} 2'$ N. long. $67^{\circ} 59'$ W. the observed alt. $\odot$ was $31^{\circ} 24' 13''$ (bearing east by compass) at 8h. 16m. 48s. A.M., ap. time and at 11h. 1m. 54s. A.M., the observed alt. was $61^{\circ} 0' 20''$ —course and distance in the interval S.bE $\frac{1}{2}$ E. 28 miles—the eye 22 feet. No index error. Required the lat. when the latter alt. was taken.

164. March 24, 1858, P.M., at ship lat. $9^{\circ} 4'$ S. the observed alt. $\odot$ is $29^{\circ} 50' 30''$. Index error $1' 10''$ to add, eye 17 feet, the time by chronometer 24d. 1h. 3m. 10s. which had been rated Jan. 2, when it was fast 3r 13s. on G. m. t. at noon, and losing daily 3s. Required the longitude.

165. Nov. 18, 1858. Required the times of high water P.M., and A.M., at Croque Harbour, N. F.

166. Dec. 15, 1858, required the ap. time when the moon will be on the meridian of St. John's, N. F. and what will be her true and apparent alt. at that time, and also her semi-diameter horizontal parallax, R. A. and declination.

167. March 25, 1858, lat. $18^{\circ} 20'$ N. long. $140^{\circ} 20'$ W.