What is the average size of all sharks in the world?

Solution:-

Assume s = 0.5 m, n = 40, $\overline{x}$ = 5 m, CI = 95%

α = 1 – 0.95 = 0.05

0.05 will be divided between both the parts i.e. 0.025 for the left part and 0.025 for the right part.

Area for the rest of the part = 1 – 0.025 = 0.975

After checking in Z-score table, value of $Z_{0.975}$ = 1.96

Formula for Lower Fence:-

$$\overline{x} - Z_{\frac{a}{2}} * \frac{s}{\sqrt{n}}$$

Formula for Higher Fence:-

$$\overline{x} + Z_{\frac{a}{2}} * \frac{s}{\sqrt{n}}$$

Putting the respective values in the equation and after calculation, we get:-

Lower Fence = 4.845

Higher Fence = 5.155