Computation for Critical Value

Let me clarify you the easiest way of computing critical value for the standard normal distribution like:

- $Z\alpha_{/2}$ and
- Z_{α} e.t.c

1. For instance if you are interesting to compute $Z\alpha_{/2}$ for $\alpha = 10\%$

$\Rightarrow \alpha = 0.1$

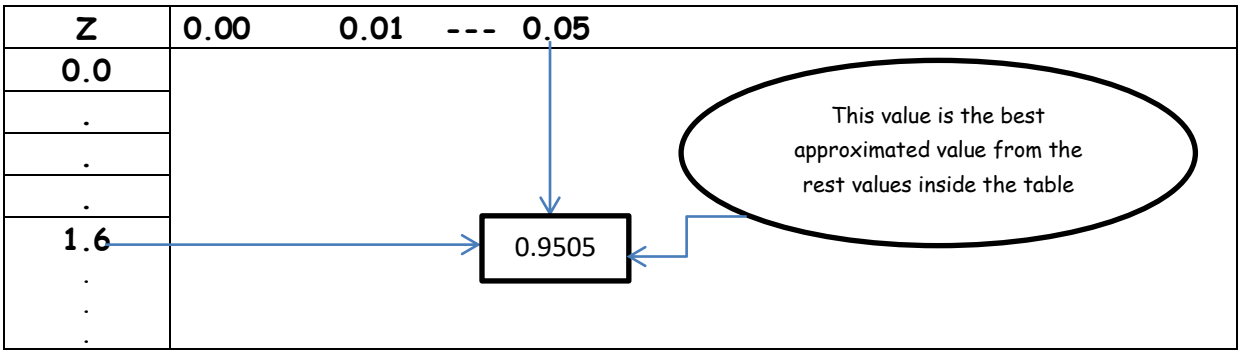
$\Rightarrow \frac{\alpha}{2} = \frac{0.1}{2} = \mathbf{0.05}$ **then, subtract this value from 1**

$\Rightarrow$ 1-0.05 = 0.9500

Now you can find the best approximated value for 0.9500 from distributional values (*bellow the first row and to the right of the first column*) and then the value of $Z\alpha_{/2}$ becomes the sum of the column and row values corresponding to that value.

$\Rightarrow Z\alpha_{/2} =$ **1.65**

i.e. Follow the following pattern;



2. As another example, we may also interested to compute Z_{α} for $\alpha = 0.01$ or 1% then with the same fashion we can use the above procedure i.e.,

$Z_{\alpha} = Z_{0.01}$

$\Rightarrow 1 - \alpha = 1 - 0.01 = 0.9900$

- Now you can find the best approximated value for 0.9500 from distributional values which is equals to 0.9901

$\Rightarrow Z_{\alpha} = 2.33$ which means **2.3** on row-wise and **0.03** on column wise

3. Please you can practice by taking any α value for the common understanding like;

- 98% CI $\Rightarrow \alpha = 2\%$ *and compute* $Z\alpha_{/2}$,
- $\alpha = \mathbf{10}\%$ and compute Z_{α} ,
- $\boldsymbol{\alpha} = \mathbf{1}\%$ and compute $Z\alpha_{/2}$ and so forth …using similar procedures above. It helps you to prepare yourself for the final exam.