Function:- arccos(x)

Problem-2

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1 Assumptions

- In function $arccos(x)$, x is a real number.
- Function returns the value of $arccos(x)$ in radians.
- If the argument of the function is NaN, then the result is NaN.

2 Requirements

- **ID** : REQ-1
  Type : Functional Requirement
  Description : User input should be between -1 and 1 inclusive because the domain of the function $arccos(x)$ is $-1 \leq x \leq 1$.
  Rationale : The rationale behind this requirement is that the output of the function $arccos(x)$ is undefined if the value of x is not between -1 and 1 inclusive.
  Difficulty : Easy

- **ID** : REQ-2
  Type : Functional Requirement
  Description : The output of the function is assumed to be in radians. One more function should be made to to convert radian values to degree values.
  Rationale : The rationale behind this requirement is that the scientific calculator gives the result in degree values.
  Difficulty : Nominal

- **ID** : REQ-3
  Type : Functional Requirement
  Description : To define the inverse function, each value in the domain must correspond to exactly one value in the range and vice versa.
  Rationale : The rationale behind this requirement is that the original function i.e. $cos(x) where - 1 \leq x \leq 1$ is one-to-one function.
  Difficulty : Nominal

References

[1] RapidTables,
`https://www.rapidtables.com/math/trigonometry/arccos.html`

[2] Emathhelp,
`https://www.emathhelp.net/notes/algebra-2/trigonometry/function-y-arccos-x/`

[3] Microsoft,
`https://docs.microsoft.com/en-us/powerapps/maker/canvas-apps/functions/function-trig`

[4] Mathonweb,
`http://mathonweb.com/help`$_e book/html/algorithms.htmarcsinCliffsNotes$,
`https://www.cliffsnotes.com/study-guides/trigonometry/inverse-functions-and-equations/inverse-cosine-and-inverse-`