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 radian.
- If the argument of the function is NaN, then the result is NaN.

2 Requirements

(a) **ID =** REQ-1

Type = Functional Requirement

Version = 1.0

Difficulty = Easy

Description = User shall give input value x between -1 and 1 inclusive to satisfythe constraint that 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.

(b) **ID =** REQ-2

Type = Functional Requirement

Version = 1.0

Difficulty = Nominal

Description = The system shall take input x to give the output of the function in radian. For example: $arccos(0.5) = 1.4719....$

Rationale = The rationale behind this requirement is that only one input x which is real number is required to calculate result of arccos(x).

(c) **ID =** REQ-3

Type = Functional Requirement

Version = 1.0

Difficulty = Nominal

Description = The system shall calculate the value of $arccos(x)$ up to the precision of four decimals to get the stable output. For example: $arccos(0.5) = 1.4719$

Rationale = The rationale behind this requirement is that the function might give an output that has infinite number of decimals points.

References

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

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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-