FAOC Reviews 2 Summary:

* Reviewer 1
* Reviewer 2
* Reviewer 3

High Effort:

* More case studies e.g. sin(x) or 2^x?
* Highlight the novelty of the verification methodology
* Account for approximation error in ln(2)
* Explain how to get to the error terms in Cadence examples
* Complains about no evidence of working for 64 bits
* Error in relative error in section 5
* In all examples the MSB are present, which means that the multi-variable capabilities are not really explored?
* Compare to CoqInterval (see reviewer 3’s examples)

Medium Effort:

* Relevance of Gappa comparison
* p3 line 45-52: an example would be helpful.
* The paper should clarify early on exactly what the verification goal is.
* I was slightly disappointed that you could do no better than Gappa ten years ago.
* Is Mathematica in the trust base?
* Do you plan to handle iterative techniques (for division or square root)?
* Do you plan to handle correct rounding?
* How often is exhaustive testing needed?
* Discuss FPtaylor (state of the art apparently)
* Explain the bounds on the floor function approach, i.e. why we aren’t doing floor(x,y) approach
* Explain the variable explosion issue. We had to hand generate all these variables
* Underflow fears in sect 5

Low Effort:

* p3 lines 20-23: the enhancement is the addition of the axiom (forall x. x-1 < floor(x) <= x)? I do not understand the last sentence
* p3 line 45-52: an example would be helpful. Similarly for the log example on lines 23-23 of page 4 (e.g., we do not calculate k = min\_k |x -c\_k|, but rather k = min\_k |1.significant(x) - c\_k|).
* p3 line 58 "the" Remez algorithm?
* p4 line 21-25: "following identity. <equation>," -> "following identity: <equation>."
* p54 line 28: "contains a zeroth order term" -> "is a constant polynomial"?
* p6 ln 13 "are are"
* p6 ln 28: is this a change of notation (\overline{ln} is now M\_1\_ln)? Why?
* p8 line 58-60: is => intended to be read as implication? YES
* fig 3: what is \overline{w} (opposed to w)?
* Note that there is a more recent IEEE-754 standard, and doubles are now "binary64".
* Why did you not add binary logarithm to Metitarski?
* p7 L36 "eqn 1" should probably be a reference. What is meant here?
* p11 l14 "IEEEdouble"
* References to the ARITH symposium are not homogeneous
* Argument reduction query
* Comparable times for the Gappa proof?
* Comment on Harrison having to redo much of the work unfair?