Calculator Applications Contest A Conversation with the Calculator Applications State Director

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UIL Calculator Applications Contest Director

Attention All Attendees:

Thank you for registering your attendance for **EACH SESSION**:

http://www.uiltexas.org/academics/ capital-conference/online

Electronic handouts are available there too.





What Would You Like to Talk About?

- Types of Calculators/Handheld Computers
- Test Philosophy
- Is it Time for a New/Revised Contest Manual? (2010)
- Types and Distribution of Problems
- Math Topics Covered [Algebra, Trig, Calculus, Matrix Algebra]
- Order of Problems
- Is the Test Too Hard?
- Percent Stated Problems
- ???

Handheld "Computers"





Retail ~\$100-150 Computer-like Functionality Key Functions Non-Erasable

ti Nspire CX

hp Prime (32 MB memory/256 MB flash memory)

Handheld "Computers"

- Distinguish between "calculators" and "handheld computers"
- Outlaw the latter based on (hopefully!) some rational criteria and to continue to operate as we have the last 35 years.
- End game:

(1) The contest will die due to the eventual extinction of handheld calculators and their users

(2) The CAC in the process of dying will become an anachronistic embarrassment, just like the old UIL Slide Rule Contest was in the late 1970s.

- Embrace the oncoming wave of handheld computers
- Some skills we think are important be lost in the process? Yes, of course. This happened with the Slide Rule Contest too.

Test Philosophy

- The *contestant* should win the contest, not the *calculator*.
- The need for people to apply mathematical principles to realworld situations is not going to change. There is a skill set associated with this that is independent of tools used to obtain answers.
- We should focus on the future, not the past.
- If a calculator/handheld computer gives an unfair advantage, then change the contest to even the playing field.

Calculators at the 2018 State Meet (288 Total)



"Winning" Calculators at the 2018 State Meet (72 Total)



Calculators at the 2018 State Meet (288 Total)



■ 1A ■ 2A ■ 3A ■ 4A ■ 5A ■ 6A

"Winning" Calculators at the 2018 State Meet (72 Total)

Winners



■ 1A ■ 2A ■ 3A ■ 4A ■ 5A ■ 6A

Percent Problems

Percent problems are ways to compare two numbers.

Currently Five Forms (Contest Manual, summarized in Appendix E):

- Difference (2018)
- Change (2008)
- Error (2018)
- Increase (2009)
- Decrease (2011)

Percent Difference

Basis:First MentionedDifference: 2^{nd} Mentioned – 1^{st} MentionedProperties:Can be + or –

Based on a web search, this convention is used by no one outside the UIL Calculator Applications Contest!

Summary of Percent Problems

	Numerator	Basis	+/-	"Fix"
Difference	Second-First	First	+ or -	Retire
Change	New-Old	New	+ or -	ABS(Basis)
Error	Approximate-Exact	Exact	+ or -	ABS(Basis)
Increase	Larger-Smaller	Smaller	+	ABS(Basis)
Decrease	Larger-Smaller	Larger	+	ABS(Basis)

Percent Problems on the 2019 Tests

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- Difference: 0
- Change: 1
- Error: 3
- Increase:
- Decrease: 2