RESEARCH STATEMENT

Original Creative Work

Citation: Patson, N 2011, *Clock Hand Tips,* Wolfram Mathematica, http://demonstrations.wolfram.com/ClockHandTips/ , creative work.

Research Background
Accurate clocks set to the same time are on display in a virtual clock shop. The sum of all the pair wise distances between the tips of the second hands ("tip distance sum") minus the sum of all the pair wise distances between the centres of the clock faces ("centre distance sum") is graphed. The time can be changed using the "time" slider. The position of the clocks can be changed by dragging them or clicking inside the display area. New clocks (up to 20) can be added by holding down the Alt key and clicking in the display area.

The demonstration shows the difference in distance between the total pair wise distances between clock centres and clock second hand tips.

Research Contribution
Innovation – This demonstration gives a visual and kinaesthetic view to the mathematical question:
> Prove that there will always be a time when the sum of the pair wise distances between the clock hand tips will be greater than the sum of the pair wise distances between the clock centres?

Research Significance
The demonstration has been through a rigorous review process†.
> † http://demonstrations.wolfram.com/FAQ.html

This demonstration illustrates a puzzle described in the Australian Mathematical Society Gazette http://www.austms.org.au/Publ/Gazette/2010/Nov10/37%285%29Web.pdf.

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