‘Big World’

There are a variety of factors in our lives that tend to ‘shrink the world’. Even before COVID-19 hit there was a tendency for many of us to stay glued to small windows on the world. Computer screens, hi-def TVs, and cell phones command ever larger amounts of our time and we willingly obey them even if our health and safety is at risk. Consider how often we find some motorist a good 100 yards from the cars stopped in front of him at a red light. Why such a large distance? The charitable soul might say that such cushion was provided in an over-abundance of caution but most of us recognize that the real reason: the red light provides a chance to spend more time with the smart phone. After all, who knows what interesting development has arisen in the last 30 microseconds. After the arrival and rise of the pandemic, things have only gotten a lot worse. Many of us work from home, a situation that more and more closely resembles house arrest rather than telework.

And the sad part is that the world is a lot bigger than many of us appreciate. It seems that desperation is on the rise and some people think that the only way out is suicide. That point-of-view is extremely tragic. Regardless of its many flaws, life is always about fresh starts and new beginnings but, sadly, one only sees that if one steps back from the small windows to see the big world full on.

Now onto the columns.

This month’s [Aristotle to Digital](http://underthehood.blogwyrm.com/?p=1516) continues the in-depth look at category theory. The current topic is that very special of all mappings from sets to sets – the isomorphism. An isomorphism allows us to trace the mapping back from the target set to the initial set with no guess work or ambiguity. Perhaps surprisingly, this notion is rich with real world applications that sit outside and/or above the usual mathematical contexts in which it is defined.

[Common Cents](http://commoncents.blogwyrm.com/?p=833) looks at what happens when crowd sourcing on the internet and Wall Street trading and hedging collide head on. For what is likely the first time in history, a group of loosely affiliated group of retail traders put the squeeze on some of the big institutional traders and left them holding useless short sells of Game Stop. Truly a February to remember.

Finally, [Under the Hood](http://aristotle2digital.blogwyrm.com/?p=1134) shows a physical context for the partial derivative machinery developed in the January column. The subject is thermodynamics and the context are the various thermodynamic potentials, such as the internal energy and the entropy, which are oh so useful and oh so abstract. Just where does one buy an entropy meter? Applications of the partial derivative identities derived earlier and the Maxwell relations equating various second-order partials derivatives demonstrates that one does need to.

Enjoy.