**Links to Some of My Favorites Desmos Examples**

**AP Statistics**

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| Link | Description |
| <https://www.desmos.com/calculator/mqronekdpi> | **Illustrating R-Squared**  Students often memorize the canned interpretation of R-Squared, but can they see what it means as a ratio? |
| <https://www.desmos.com/calculator/jartj82idx> | **Why t?**  Students often know ***when*** and ***how***to use  t-distributions, but the ***why*** is seldom communicated with anything beyond, “…because is unknown.”  This graph is connected to a lesson and Excel simulation.  Lesson being taught: <https://www.youtube.com/watch?v=gKi1Gx-yaKY>  Excel File: <https://github.com/stevenmalan/APStats/blob/main/Why%20We%20Need%20T.xlsx> |
| <https://www.desmos.com/calculator/0noysxvdx7> | **Binomial and Normal**  The basic requirements for a binomial distribution to approximated by a normal distribution are   and  But why? What does that have to do with the shape. In this graph, students can interact and get a feel for why a bigger sample size is better and how tend to skew the binomial distribution. |
| <https://www.desmos.com/calculator/1m8i3qnodf> | **Resisting Outliers**  A quick graph to show stats students why the media is resistant to outliers. |

**Algebra 2 – Teaching**

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| Link | Description |
| <https://www.desmos.com/calculator/ibhyqmdoyq> | **Matrix Rotations** Standard curriculum merely asks students to predict and demonstrate what a simple transformation matrix, such as , would do. Pretty boring. And not visual at all!  This graph shows students the true effect of using new basis vectors. |
| <https://www.desmos.com/calculator/xvypz3mrve> | **Multiplying on a Parabola**  This graph quickly *shows* students a beautiful trick and guides teachers in how to help students prove it |
| <https://www.desmos.com/calculator/ecxhie5usx> | **6 Trig Functions on the Unit Circle**  Students always memorize that on a unit circle,   and , but where are all our other trig friends? This graph shows how all 6 common trig functions are visualized with the same diagram. |
| <https://www.desmos.com/calculator/qf0l02m3ra> | **Transformation Activity**  I use Desmos for ALL my lessons on shifting and scaling functions, but this is an activity for students to try out their own transformation skills. |

**Algebra 2 – My Students’ Work**

*I am* ***NOT*** *the creator/owner of these graphs. Rather, they show how far my Grade 9-10 students progressed in 2 weeks when under my guidance. Their names have been removed.*

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| Link | Description |
| <https://www.desmos.com/calculator/p7ktgqa8cp> | Cow and Barn |
| <https://www.desmos.com/calculator/exehukl5y9> | Doraemon (blue cat from cartoon) |
| <https://www.desmos.com/calculator/xtharhzr6o> | Patrick (from SpongeBob) |
| <https://www.desmos.com/calculator/nix4jdwtkj> | Wall-E |
| <https://www.desmos.com/calculator/bwer7uxvky> | Kim Yuna (Korean figure skater) |
| <https://www.desmos.com/calculator/ovnm1vlhxh> | Starbucks |
| <https://www.desmos.com/calculator/dluoztvbxd> | Space |

**Miscellaneous/Fun**

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| Link | Description |
| <https://www.desmos.com/calculator/3srrnsdrsa> | **Spiral Paint Drip**  When our art class hung a dripping paint can from a string and spun it in a spiral, the art teacher asked if I could represent its motion with an animated function. |
| <https://www.desmos.com/calculator/hc0zcgrdbm> | **House Points**  Our principal was looking for a non-proportional way to award house points, based on how few detentions students received. She asked me to create a formula. I created a visual so that she could understand my proposed formula and alter if it she wished. |
| <https://www.desmos.com/calculator/3vfl7vyqt1> | **Vector-Valued Functions**  With parametric functions, students must learn to think of , , and perhaps as each responding to an independent parameter . But with vector valued functions, students should also remember that the path is really being traced out by the tip of a vector emanating from the origin. |
| (No link; Just a fun tangent.) | **Creating LaTeX**  I was pretty excited when I learned that Desmos equations could be copied and pasted elsewhere as LaTeX code. I encouraged my Multivariable Calculus student to use this as a quick “cheat” to create a complicated expression. |