

### **1. To Start:**

- a. Go to <https://www.desmos.com/calculator> and create a free account. This is necessary so that you can save your work. Be sure your username and password is school appropriate, and that you make note of it.
- b. If you have questions about using Desmos, go to [https://desmos.s3.amazonaws.com/Desmos\\_User\\_Guide.pdf](https://desmos.s3.amazonaws.com/Desmos_User_Guide.pdf)
- c. To limit the domain of a function, type the equation of the function and then, in curly brackets, type the limitation. (eg.  $y = x^2 \{-2 \leq x \leq 2\}$  limits it to only  $x$  values between  $-2$  and  $2$ ) You can also limit the range in the same way, using  $y$  in the curly brackets instead of  $x$ .
- d. To shade a function, write the equation as an inequality.
- e. Refer to the list of parent equations below (some of them we haven't learned yet, but it might be fun to try them). You're welcome to use others that aren't on the list as well.

### **2. Plan Your Art**

- a. Make sure you read the rubric so you understand the project requirements!!
- b. What, you say? You're not an artist? Ok.. let's brainstorm. Maybe it is a logo for your favorite school or team. Maybe it's a simple rendition of a famous piece of art. Maybe it's a cartoon character that you want to bring to life.
- c. Create a simple pencil sketch of your planned art on graph paper. Here's the catch: as you create the sketch, think about the parent function you've learned (and their transformations). Some of you may prefer to try ideas directly in Desmos rather than starting with a sketch. Whatever works for you, go for it!
- d. Copying a Desmos design is considered cheating and you will receive a 0 for the project

### **3. Create Your Art On Desmos**

- a. Log in so you will be able to save your work.
- b. Note that you can vary the window if you'd like.
- c. You can change the color of the line you use. Hold you cursor down on the color button next to the equation and a menu of colors will pop up. You can change your line from solid to dotted as well as change the color.

### **4. Submit Your Work**

- a. When your artwork is complete, send an email to me with:
  - \*\* the link to your design and equations
  - \*\* your typed reflection, either in the body of the email or as an attachment (not as link!!)

### **5. Reflection**

- a. Your name and class period
- b. The title of your design
- c. A list of each type of equation you used and how many times you used it (ex.  $y = x^2$  – used 4 times)
- d. What you found interesting about creating art on Desmos
- e. What you found difficult in creating art on Desmos
- f. How you would change this project for students next year

### Parent Function/Equation Examples

(for all equations listed below,  $m, a, b,$  and  $r$  all represent constants)

\*\*  $y = mx + b$

\*\*  $x = a$

\*\*  $y = x^2$

\*\*  $x = y^2$

\*\*  $y = a(b)^x$

\*\*  $x^2 + y^2 = r^2$

\*\*  $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$

\*\*  $y = \frac{1}{x^2}$

\*\*  $y = \sin x, y = \cos x, y = \tan x$

\*\*  $y = \frac{1}{x}$

\*\*  $y = \sqrt{x}$

\*\*  $y = |x|$

(don't forget about inequalities so you can put shading in your drawing!)

### Rubric – 15 Quiz Points DUE Wednesday 12/19 by 3PM

	3	2	1	0	Score
Parent equations	Uses 6 or more unique parent equations	Uses 5 parent equations	Uses 4 parent equations	Uses less than 4 equations types	
Inequalities	Uses 5 or more inequalities	Uses 3-4 inequalities	Uses 1-2 inequalities	Uses 0 inequalities	
Number of equations	Uses 20 or more equations	Uses at 15 equations	Uses at least 10 equations	Uses less than 10 equations	
Participation	Excellent	Pretty good	Fair	None	
Reflection	Very thorough and thoughtful	Thorough, only did what was necessary	Minimal effort shown	No reflection	

Total: \_\_\_\_\_ / 15