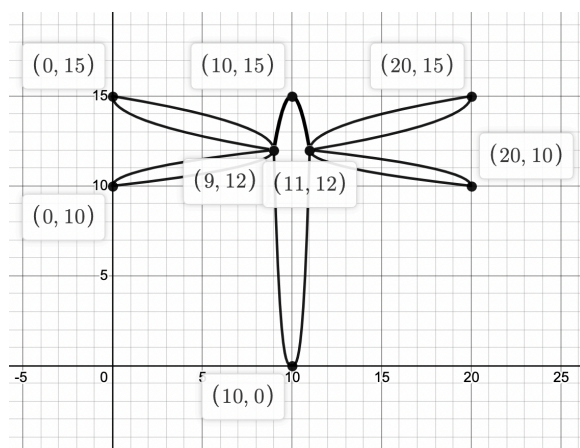
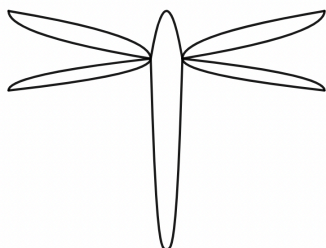


Dragonfly Practice

The dragonfly design below can be placed on a set of axes as shown.



1. Find a function (may be more than one), from the list below, to model the following:
 - Top of the body
 - Bottom of the bodyFor each of these, show the algebra that you used to work out the equation(s). Explain the important properties of each curve, including the domain and range.
2. Find four functions, from the list below, that will model the left hand wings. For each of these, show the algebra that you used to work out the equation. Explain the important properties of each curve, including the domain and range.
3. Reflect the left hand wing curves in the y axis, then translate them to the right to produce the curves for the right hand wings.

Choose from this list of functions:

- Parabola, cubic, exponential, square root, logarithmic, hyperbola

Excellence preparation:

Complete ONE of the following:

- Fully describe how you reflected and translated the left hand wing curves in order to create the right hand wing curves. Describe the generalisation of each transformation, and how this generalisation can be used to give the equation of the reflected wing.

OR

- Animate your dragonfly in some way. Check out [the following animation](#) and try to create your own animation using sliders in desmos. Include a description of how the animation works.
See [this video](#) if you are not sure how to create animations in desmos using sliders.

When handing in your work, include a screenshot of your desmos graph including the formulae.