

#### **Milestone 4: Check for collisions between the ship and asteroids.**

For this milestone, you will add code that checks for a collision between your ship and all of your asteroids.

To test if your ship is colliding with an asteroid, we need to be able to test if two polygons are intersecting each other.

Look at the non-static method `contains(Point point)` in `Polygon`. This method checks if the given `Point` is contained in the instance of `Polygon` calling the method. That is, are the coordinates of the given `Point` in the region defined by the `Polygon` calling it. Notice that `contains()` calls `getPoints()`, so it is using the current location of the `Polygon` (with the offset and rotation applied) to get the boundary.

Write a method in `Polygon` that uses the `contains()` method to test if two `Polygons` intersect. Should this method be static or non-static? What should the return type of this method be? There are a few different way to write the method, and some will work better than others. This method does not have to be perfect, but should at the very least detect most of the obvious collisions.

Add code to the method `Asteroids.paint()` in the main game class to check for collisions between your ship and all asteroids.

To test your code, make something happen on the screen if there is a collision between the ship and an asteroid. For example, you could have the word “Collision” appear at the top of the screen. You could also do something fancier, like losing a life or losing points if your ship hits an asteroid (and this can count as an extra feature).