05

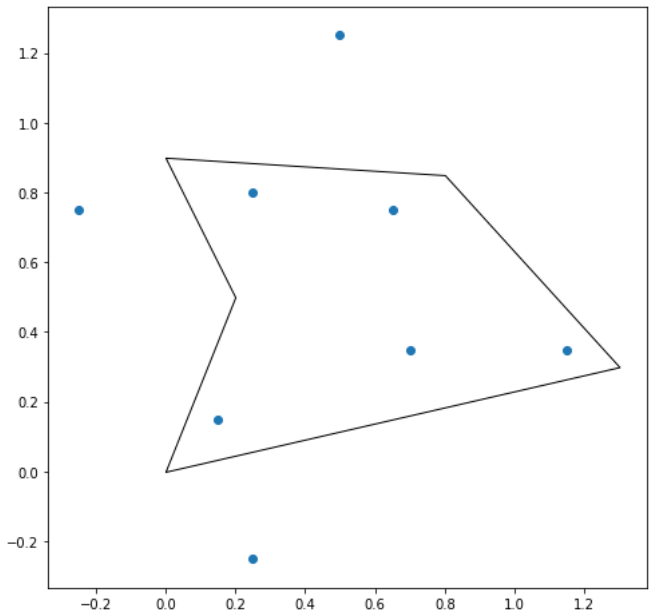
Seleção de pontos dentro de um polígono

Considere o código abaixo e seu *output*:

In [1]:

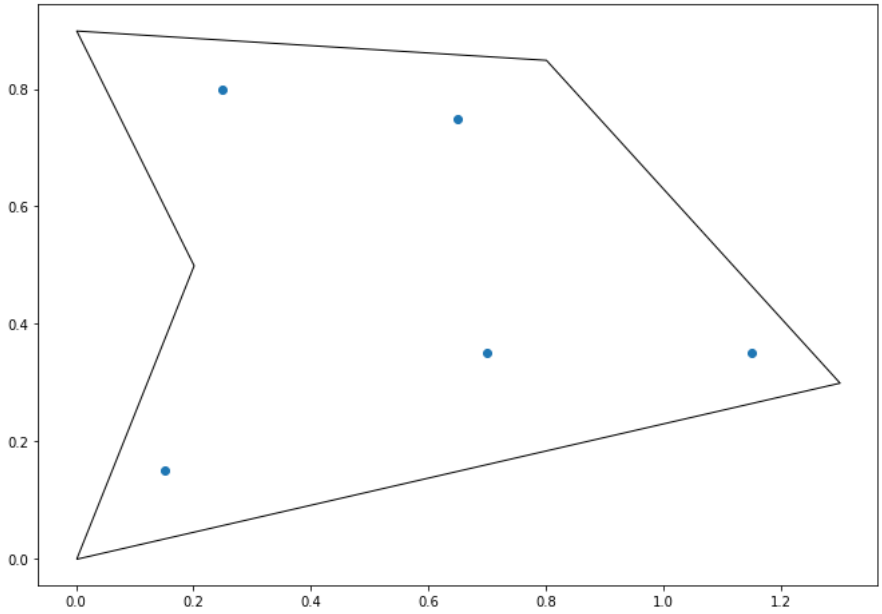
```
%matplotlib inline
import geopandas as gpd
from shapely.geometry import Point, Polygon

polygon = Polygon([(0, 0), (1.3, 0.3), (0.8, 0.85),
                   (0, 0.9), (0.2, 0.5)])

points = [Point(0.65, 0.75), Point(0.25, 0.8),
            Point(0.7, 0.35), Point(0.15, 0.15),
            Point(1.15, 0.35), Point(-0.25, 0.75),
            Point(0.25, -0.25), Point(0.5, 1.25)]

polygon = gpd.GeoSeries(polygon)
points = gpd.GeoSeries(points)

base = polygon.plot(color='white',
                    edgecolor='black',
                    figsize=(15, 8))

points.plot(ax=base)
```

Out[1]:



Utilizando a técnica aprendida na última aula, selecione a opção que produz o seguinte *output*:

Out[1]:



Selecione uma alternativa

A

```
points = points[points.within(polygon.iloc[0])]
base = polygon.plot(color='white',
                    edgecolor='black',
                    figsize=(15, 8))
points.plot(ax=base)
```

B

```
points = points[polygon.within(points.iloc[0])]
base = polygon.plot(color='white',
                    edgecolor='black',
                    figsize=(15, 8))
points.plot(ax=base)
```

C

```
points = points[points.within(polygon)]
base = polygon.plot(color='white',
                    edgecolor='black',
                    figsize=(15, 8))
points.plot(ax=base)
```

D

```
points = points[~points.within(polygon.iloc[0])]
base = polygon.plot(color='white',
                    edgecolor='black',
                    figsize=(15, 8))
points.plot(ax=base)
```