# Project 1

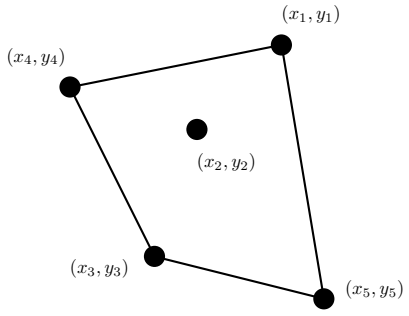
The first project is writing a Matlab function `convex.m` which works as follows.

- As an input, `convex.m` takes the two arguments `arg_x` and `arg_y`. These are the array of $x$ and $y$ coordinates of $n$ points in $\mathbf{R}^2$.
- As an output, `convex.m` draws the *convex* domain containing all $n$ points above, and prints the area of this convex domain.
- Suppose that $x_i, y_i$ $i = 1, \cdots, 5$ are real numbers and we enter the following command at the folder containing the file `convex.m`.

```
> x = [ x1 x2 x3 x4 x5 ]
> y = [ y1 y2 y3 y4 y5 ]
> convex(x,y)
```

  Then the figure pops up as well as the value of the area prints on the command line.

```
Ans =
      (area_of_domain)
```

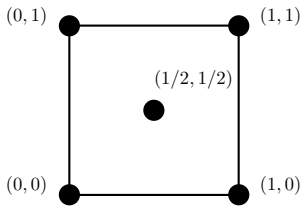



- For example, the following command draws the square and its area

```
> convex([ 0 1 1 0 1/2 ], [ 0 0 1 1 1/2 ])
```

  The result is

```
Ans =
      1
```




- See the next page for the instruction.

# Important notes