77. Convex-Hull Problems

Code:

```
def is_point_in_convex_polygon(polygon, point):
    n = len(polygon)
    def cross_product(p1, p2, p3):
        return (p2[0] - p1[0]) * (p3[1] - p1[1]) - (p2[1] - p1[1]) * (p3[0] - p1[0])

    orientation = cross_product(polygon[0], polygon[1], point)

    for i in range(1, n):
        next_orientation = cross_product(polygon[i], polygon[(i + 1) % n], point)
        if next_orientation * orientation < 0:
            return False
    return True
polygon = [(0, 0), (5, 0), (5, 5), (3, 6), (0, 5)]
point_inside = (2, 3)
point_outside = (6, 1)

print("Point (2, 3) inside polygon:", is_point_in_convex_polygon(polygon, point_inside))
print("Point (6, 1) inside polygon:", is_point_in_convex_polygon(polygon, point_outside))
```

Output:

```
Point (2, 3) inside polygon: True
Point (6, 1) inside polygon: False
```

Time Complexity:

- T(n)= O(nlogn)