**Question 1:** Are the following two curves the same?

Given a circle $O$ centered at point $O$ with a radius 5 (we will name all the circles by the center points from now on), $A$ is a fixed point on circle $O$ and $B$ is the point moving around on circle $O$. For each such point $B$, draw a circle centered at $B$ with a radius $|BA|$. Curve 1 is the boundary of the green region generated by all the circles centered at $B$ as shown in Figure 1.

![Figure 1](image1.png)

Circles $O$ and $P$ are both of radius 5 and tangent to each other at point $A$ (the sharp edge). Being tangent to circle $O$, circle $P$ rolls around circle $O$ as illustrated in Figure 2. Curve 2 is the path of point $A$'s movement.

![Figure 2](image2.png)

Is curve 1 identical to curve 2? Prove your answer.
**Question 2:** Are the following three curves the same?

Curve 3 is the edge of the purple region obtained by moving a line segment of length 5 along the x and y axes as shown in Figure 3.

![Figure 3](image)

Curve 4 is the boundary of the orange region generated by all the ellipses E centered at the origin for which the sum of the lengths of the semi-major and semi-minor axes is always 5 as in Figure 4.

![Figure 4](image)

Given a circle O with a radius 5, P is another circle of radius 1.25 inside and tangent to circle O at point A (one of the sharp corners). Curve 5 is the trace of the movement of point A when P rolls around inside circle O as demonstrated in Figure 5.
Do curves 3, 4 and 5 represent the same curve? Prove your result.