Show that a disc of radius 2 can be covered by 7 (possibly overlapping) discs of radius 1.

**Solution:** First note that we can inscribe any regular hexagon of side length \( \ell \) into a disc of radius \( \ell \). Thus, the seven regular hexagons below of side length 1, packed into a honeycomb formation, can be covered by 7 overlapping discs of radius 1. Further, since the distance from the center of a regular hexagon to any of its vertices is the same as the side length, the distance between the two drawn circles—one at the center of the formation and the other at a closest point from the boundary to the center—is 2. Thus, a disc a radius 2 does not go outside of this figure.

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