## **Research Program**

This year's research activities include the following plans.

- (0) Publication programs of the papers of the items 128 and 133-138 in the publication list. In particular, a revised proof of "Uniqueness of an orthogonal 2-handle pair" of the item 128 paper and a revised paper of the item 138 paper are in preparation.
- (1) A study on 3-dimensional knitting patterns.
- (2) A new development on knotting probability of a spatial arc.
- (3) A new development on topological imitations of (3,1)-manifold pairs.
- (4) A new development on a slice knot.
- (5) A study on the fundamental group of a ribbon 2-knot.
- (6) A study on low-dimensional spheres.
- (7) A study on a Seifert hypersurface for a surface-knot.
- (8) A study on a commutative password system applying knot theory.
- (9) Diffusion of an infant and elderly versions of the knot game "Region Select" into society.