Coded pictures

Draw coded pictures on graph paper starting with a dot on the grid intersection and following the instructions below.

For example: \( \downarrow 1 \searrow 2 \) means that one has to draw a line going down one box of the grid, and then continue drawing diagonally down-right across two boxes.

**Problem 1** (Start at the point marked “1” on the handout grid)

\[ \searrow 1 \rightarrow 1 \ \downarrow 2 \rightarrow 3 \ \searrow 2 \leftarrow 1 \]
\[ \downarrow 1 \searrow 1 \leftarrow 3 \searrow 1 \uparrow 1 \leftarrow 1 \]
\[ \nwarrow 2 \rightarrow 3 \uparrow 1 \leftarrow 1 \]

**Problem 2** (Start at the point marked “2” on the handout grid)

\[ \rightarrow 1 \ \downarrow 1 \leftarrow 3 \nwarrow 2 \rightarrow 1 \ \downarrow 1 \]
\[ \nwarrow 1 \rightarrow 3 \nwarrow 1 \uparrow 1 \rightarrow 1 \nwarrow 2 \]
\[ \leftarrow 3 \uparrow 2 \leftarrow 1 \nwarrow 1 \]
Problem 3

A wicked witch grabbed Hermione Granger and took her to the witch’s cabin. Hermione remembered the path to the cabin but she had no graph paper to draw it:

\[ \downarrow 2 \uparrow 1 \rightarrow 2 \downarrow 2 \leftarrow 4 \uparrow 1 \rightarrow 1 \]

Give Hermione the code for the return trip to the school without drawing the path.