Worksheet: Constructing Möbius transformations

The problems below are Exercises 1 (a) and 1 (h), respectively, from section II.7.

1. Construct a Möbius transformation (fractional linear transformation) which maps these triples:

$$(1+i, 2, 0) \quad \mapsto \quad (0, \infty, i-1)$$

2. Construct a Möbius transformation which maps these triples:

$$(1, i, -1) \quad \mapsto \quad (1, 0, -1)$$