Chapter 6

#3 Read the instructions below the problem.

#4 The normal form is given by $S \circ T = R \circ S$.

(a) If $e^{\theta i} = 1$, then $T(z) = z + b$ is a translation and $S(z) = z$. So the normal form is simply

$$T(z) = z + b.$$ 

(b) If $e^{\theta i} \neq 1$, then $T$ is a rotation about the point $p = \frac{b}{1 - e^{\theta i}}$ and $S(z) = z - p$ (why?). This leads to the normal form

$$T(z) - p = e^{\theta i} (z - p).$$

#6 Start with $T(z) = 1/z$ and proceed as in Problem 3.

#9 The notation $T^2 = I$ means $T(T(z)) = z$ for all $z$.

#13 Make use of Problem 12.

#15 (c) Use Problem 14.

#16 Work with Problem 15.