Complex numbers in polar form

Recall that the polar form of complex numbers is $r(\cos\theta + i\sin\theta)$ where $r \in \mathbb{R}_+$ and $\theta \in [0, 2\pi)$.

Exercise 2.6

Show that if $z_1 = r_1(\cos\theta_1 + i\sin\theta_1)$ and $z_2 = r_2\left(\cos\theta_{2_i}\sin\theta_2\right)$ are complex numbers in polar form, then:

$$z_1 z_2 = r_1 r_2(\cos(\theta_1 + \theta_2) + i\sin(\theta_1 + \theta_2))$$