ALGORYTMY KWANTOWE
Lista nr 1

1. Oblicz $\gamma = \alpha + \beta$ oraz $\delta = \alpha - \beta$, gdzie
   (a) $\alpha = 1 + 5i, \quad \beta = 3 - 4i$
   (b) $\alpha = 10 - 7i, \quad \beta = -13 + 4i$
   (c) $\alpha = -1 - 6i, \quad \beta = -1 + 7i$
2. Oblicz $\gamma = \alpha\beta$ oraz $\delta = \frac{\alpha}{\beta}$, gdzie
   (a) $\alpha = 5i, \quad \beta = 3$
   (b) $\alpha = 1 - 8i, \quad \beta = -3 - i$
   (c) $\alpha = 3(\cos\frac{\pi}{5} + i\sin\frac{\pi}{5}), \quad \beta = \cos\frac{\pi}{3} + i\sin\frac{\pi}{3}$
   (d) $\alpha = 5(\cos 67^\circ + i\sin 67^\circ), \quad \beta = 7(\cos 33^\circ + i\sin 33^\circ)$
3. Przedstaw liczby zespolone α w postaci trygonometrycznej:
   (a) $\alpha = -\sqrt{3} + i$
   (b) $\alpha = 1 + i$
   (c) $\alpha = 1 - i$
4. Niech $\alpha = 3(\cos\frac{\pi}{7} + i\sin\frac{\pi}{7})$ oraz $\beta = 5 - 3i$. Oblicz
   (a) $|\alpha|$, $|\beta|$;
   (b) α^7, β^2;
   (c) $\overline{\alpha}$, $\overline{\beta}$;
   (d) $\alpha + \overline{\alpha}$;
   (e) $\beta\overline{\beta}$;