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Geometry 1 (Analytic Geometry)

Exercise Sheet 1

Exercise 1. Find the polar coordinates of the points $M_1(2,-2)$, $M_2(-1,0)$, $M_3(-2\sqrt{3},-2)$, $M_4(\sqrt{3},1)$, $M_5(3,0)$, $M_6(-2,2)$, $M_7(0,1)$ and $M_8(0,-4)$.

Exercise 2. Find the cartesian coordinates of the points $N_1\left(2,\frac{2\pi}{3}\right)$, $N_2\left(3,\frac{7\pi}{4}\right)$ and $N_3(1,1)$.

Exercise 3. Find the polar coordinates of the points $P_1(-3,3)$, $P_2(-4\sqrt{3},-4)$, $P_3(0,-5)$, $P_4(-2,-1)$, $P_5(4,-2)$.

Exercise 4. Find the cartesian coordinates of the points $Q_1\left(2,\frac{\pi}{3}\right)$, $Q_2\left(4,2\pi-\arcsin\frac{3}{5}\right)$, $Q_3(2,\pi)$, $Q_4(3,-\pi)$, $Q_5\left(1,\frac{\pi}{2}\right)$, $Q_6\left(4,\frac{3\pi}{2}\right)$.