Panel 12

Homework:

① Use DeMoivre's formula to find a trig identity for $\cos(3\theta)$

② Find all roots of

a) $(-2+2i)^{1/3}$ b) $(-1)^{1/5}$

c) $8^{1/6}$ d) $(16i)^{1/4}$

③ Let z be a non-zero complex number and n an integer.
Show that $z^n + (\bar{z})^n$ is a real number

④ Find all four roots of $z^4 + 4 = 0$ and prove that
$z^4 + 4$ factors into 2 quadratics with real coefficients.

12