

TRIGONOMETRY
DeMoivre's Theorem

HW # 64

Name _____

P-3H

1. Given that $z = 2 \operatorname{cis} 50^\circ$.
Find the polar form of a) z^6

b) z^{10}

Use DeMoivre's Theorem to find the following powers. Give answers in $x + yi$ form.

2. $(1+i)^{10}$

3. $(-1+i\sqrt{3})^7$

4. $(\sqrt{3}-i)^8$

Review

4. Find wz and $\frac{w}{z}$ in polar form with $0^\circ \leq \theta < 360^\circ$. Round decimals to tenths.

$$w = 2.2 \text{ cis } 150^\circ, z = .5 \text{ cis } 220^\circ$$

6. Express $2 \text{ cis } 120^\circ$ in $x + yi$ form. Give answer in simplest radical form.

7. Express $-3\sqrt{2} - 3i\sqrt{2}$ in polar form.

8. Plot $4 - 3i$ in the complex plane.

