

MAT 182 – Homework 13
Sections 6.1 and 6.2

NAME _____

Directions: Show all work and write your final answer in the space provided.

1. Simplify: $(4 - 5i) - (6 - 2i) + (7 - 4i)$ 1. _____
2. Write the complex number $4 - 4i$ in trigonometric form using degrees. 2. _____
3. Write the complex number $6\text{cis}(30^\circ)$ in the form $a + bi$. 3. _____
4. Multiply $(\sqrt{3}\text{cis}150^\circ)(\sqrt{2}\text{cis}315^\circ)$. Write your answer in the form $a + bi$. Nearest tenth. 4. _____
5. Divide $\frac{9\text{cis}\left(\frac{\pi}{4}\right)}{3\text{cis}\left(\frac{5\pi}{4}\right)}$. Write your answer in the form $a + bi$. 5. _____
6. Divide: $\frac{7 - 9i}{6 + 3i}$ 6. _____
7. Write the complex number $\frac{\sqrt{3}}{6} + \frac{i}{6}$ in trigonometric form using degrees. 7. _____
8. Find $z_1 \cdot z_2$ using trigonometric form. $z_1 = -3 + 3i$ and $z_2 = -2 - 2i$. Write your answer in the form $a + bi$. 8. _____
9. Write the complex number $12\text{cis}(\pi/10)$ in the form $a + bi$. Nearest tenth. 9. _____
10. Divide: $\frac{3 + 6i}{2 - 4i}$ 10. _____
11. Write the complex number $-5i$ in trigonometric form using degrees. 11. _____

12. Multiply $(8\text{cis}100^\circ)(3\text{cis}35^\circ)$. Write your answer in the form $a + bi$. 12. _____
13. Write the complex number $4.3\text{cis}(\pi/9)$ in the form $a + bi$. Nearest tenth. 13. _____
14. Multiply: $(4 - 3i)(2 + i)(3 - 2i)$ 14. _____
15. Write the complex number $8.1\text{cis}(\pi)$ in the form $a + bi$. 15. _____
16. Find z_1/z_2 using trigonometric form. $z_1 = 3 - 4i$ and $z_2 = -1 + 3i$. Write your answer in the form $a + bi$. 16. _____
17. Write the complex number $2 + 2i\sqrt{3}$ in trigonometric form using degrees. 17. _____
18. Multiply $(\sqrt{5}\text{cis}(\pi/12))^2$. Write your answer in the form $a + bi$. 18. _____
19. Divide: $\frac{7 - 2i}{-3 + i}$ 19. _____
20. Write the complex number $-2 - 4i$ in trigonometric form using degrees. Nearest tenth. 20. _____
21. Write the complex number $0.5\text{cis}(5\pi/6)$ in the form $a + bi$. 21. _____
22. Write the complex number $5 - 10i$ in trigonometric form using degrees. Nearest tenth. 22. _____
23. Divide $\frac{18\text{cis}121.9^\circ}{2\text{cis}325.6^\circ}$. Write your answer in the form $a + bi$. Nearest tenth. 23. _____
24. Multiply: $(3 - 2i)^3$ 24. _____
25. Find $z_1 z_2$ using trigonometric form. $z_1 = \sqrt{5} + i\sqrt{5}$ and $z_2 = -\sqrt{6} - i\sqrt{6}$. Write your answer in the form $a + bi$. 25. _____