**Chapter 13 Review** Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Plot the polar coordinates. Then give 2 other names for the same point.

1. $(7, 180°)$ 2. $(-3, -60°)$

Convert the polar equation to Cartesian form. Then identify what type of graph it is.

3. $r=10sinθ$ 4. $r=\frac{5}{2+3cosθ}$

Evaluate and simplify the expressions.

5. (4 – 3i)(2 + 5i) 6. (3 – 4i) – (6 + 2i)

7. $(5cis37°)(3cis54°)$ 8. $(2cis80°)(4cis120°)$

9. $\frac{3cis100°}{12cis20°}$ 10. $\frac{80cis64°}{5cis16°}$

11. $(4cis50°)^{3}$ 12. $(3cis100°)^{4}$

13. $\sqrt[4]{16cis80°}$ 14. $\sqrt[3]{125cis99°}$

15. Find the points of intersection of $r=5+4cosθ$ and $r=1+6sinθ$

Write the complex number in polar form.

16. 24 – 7i 17. -6 – i

Write the polar form as a complex number in a + b*i* form.

18. $6cis300°$ 19. $2cis80°$

20. A person hunting shoots their gun with a velocity of 300 m/sec east and 200 m/sec north. At time t = 0 seconds, the person is at the point (3, 20).

a) Write parametric equations for the bullet’s path.

b) If the bullet continues on this path and the target is at 903 m east, how many seconds will it take to reach the target?

c) How many meters north is the target?