HW #27: SHOW ALL WORK on a separate piece of paper. A calculator may be used on the problems.

Graph each equation. State the domain, range, and asymptote.

1. 2.

3. 4.

Solve each equation

5. 6. 7.

8. 9. 10.

11. 12.

Simplify each expression

13. 14. 15. 16.

17. You deposit $4500 in an account that pays 8% annual interest compounded monthly.

a) What is your account balance after 10 years?

b) In how many years will your account balance reach $30,000?

18. How much must be deposited in an account that pays 7.5% annual interest, compounded continuously, to have a balance of $14,000 after 6 years?

19. How much must you deposit in an account paying 6% annual interest compounded daily in order to have a balance of $5,000 after 3 years?

20. You deposit $3600 in an account that pays 5.75% annual interest compounded continuously.

a) What is your account balance after 5 years?

b) In how many years will your balance reach $12,000?

21. In 1998, the population of Mission Viejo, Ca was 65,000. During the next ten years the population increased by 4% each year.

a) Write a model giving the population of Mission Viejo t years after 1998.

b) Find the population of Mission Viejo in 2004.

c) Find the year when the population will be about 100,000.

22. A car depreciates at a rate of 14% per year. If the car price when purchased was $46,000, in how many years will the car be worth only $23,000?

Evaluate each expression using the change of base formula

23. 24. 25.