

Graph each exponential function or inequality.

10. $y = 2^x$

11. $y = -2^x$

12. $y = 2^{-x}$

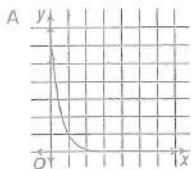
13. $y = 2^{x+3}$

14. $y = -2^{x+3}$

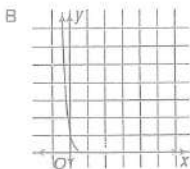
15. $y > -4^x + 2$

Match each equation to its graph.

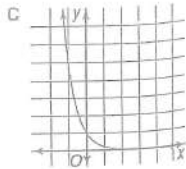
19. $y = 0.01^x$



20. $y = 5^{-x}$



21. $y = 7^{1-x}$



24. **Employment** Average national teachers' salaries can be modeled using the equation $y = 9.25(1.06)^n$, where y is the salary in thousands of dollars and n is the number of years since 1970.

- Graph the function.
 - Using this model, what can a teacher expect to have as a salary in the year 2020?
25. **Aviation** When kerosene is purified to make jet fuel, pollutants are removed by passing the kerosene through a special clay filter. Suppose a filter is fitted in a pipe so that 15% of the impurities are removed for every foot that the kerosene travels.
- Write an exponential function to model the percent of impurity left after the kerosene travels x feet.
 - Graph the function.
 - About what percent of the impurity remains after the kerosene travels 12 feet?
 - Will the impurities ever be completely removed? Explain.

26. **Demographics** Find the projected population of each location in 2015.

- In Honolulu, Hawaii, the population was 836,231 in 1990. The average yearly rate of growth is 0.7%.
- The population in Kings County, New York has demonstrated an average decrease of 0.45% over several years. The population in 1997 was 2,240,384.
- Janesville, Wisconsin had a population of 139,420 in 1980 and 139,510 in 1990.
- The population in Cedar Rapids, Iowa was 169,775 in the 1980 U.S. Census and 168,767 in the 1990 U.S. Census.

31. **Investments** The number of times that interest is compounded has a dramatic effect on the total interest earned on an investment.

- How much interest would you earn in one year on an \$1000 investment earning 5% interest if the interest is compounded once, twice, four times, twelve times, or 365 times in the year?
- If you are making an investment that you will leave in an account for one year, which account should you choose to get the highest return?

Account	Rate	Compounded
Statement Savings	5.1%	Yearly
Money Market Savings	5.05%	Monthly
Super Saver	5%	Daily

- Suppose you are a bank manager determining rates on savings accounts. If the account with interest compounded annually offers 5% interest, what interest rate should be offered on an account with interest compounded daily in order for the interest earned on equal investments to be the same?

11.2

P. # 10, 11, 13, 14, 19-21, 24-26, 31