Simplify using only positive exponents. Be sure to simplify all numbers. Do not leave decimals in any answers.

1. $\dfrac{20qr^{-2}t^{-5}}{4q^0r^4t^{-2}}$	2. $(4m^3n^{-2})(2m^4n)^{-3}$	3. $\left(\dfrac{a^{-2}b^4c^5}{a^{-4}b^{-4}c^3}\right)^3$	4. $\left(\dfrac{1}{3}\right)^5\left(\dfrac{1}{3}\right)^{-8}$
5. $(4a^{-4}b^{-9}c)^{-2}$	6. $\left(\dfrac{3f^4gh^4}{32f^3g^4h}\right)^0$	7. $w^5x^0y^{-6}z^{-1}$	8. $\left(\dfrac{2a^{-2}b^4c^2}{-4a^{-2}b^{-5}c^{-7}}\right)^{-1}$
9. $\left(-\dfrac{3}{4}c\right)^3$	10. $7t^{11}u^3(-4t^{-9})^2u^{-5}$	11. $(0.75^{-7})(0.75^4)$	12. $-\left(\left(\dfrac{1}{3}\right)^5\left(\dfrac{1}{3}\right)^{-3}\right)^{-2}$

Write the following numbers in correct scientific notation.

13. $\dfrac{1.363\times10^{16}}{2.9\times10^6}$	14. 0.0084×10^{-10}
15. $(6.5\times10^7)(7.2\times10^{-2})$	16. 4792×10^5

Solve using scientific notation.

17. Country A has a population of 6.5×10^9. You hear that country B has twice as many people as country A and country C has twice as many people as country B. How many people live in country C?
18. Light travels at 1.86×10^5 miles per second. If a particle is traveling at half the speed of light, how fast is it moving?

Evaluate each function for $x=\{-1,0,1,2\}$

19. $y=50\cdot0.1^x$	20. $y=\dfrac{1}{3}\cdot9^x$

Suppose that you invested $1200 at an interest rate of 5.75% compounded quarterly.

21. Write an exponential function to model the amount of money in your savings account after t years.	22. Determine the value of the investment after 2 years.
23. Determine the value of the investment after 7 years.	24. How much money would there be after 7 years if the account was compounded biannually?

25. Hawaii has been experiencing a 1.06% annual increase in population. In 2000, the population was 1,211,537. If this trend continues, what will be the population of Hawaii in 2020?

26. Leonardo purchases a car for $18,995. The car depreciates at a rate of 18% annually. After 6 years, Manuel offers to buy the car for $4500. Should Leonardo sell the car? Explain.

Graph each of the following functions on the graphs below. Create a table of values to make your graph. Make sure to identify the y-intercept.

27. $f(x) = -\frac{1}{4}(2)^x$	28. $y = 8 \cdot 1.2^x$