Name _____ Algebra 1

Chapter 8 Practice Test

No calculator section:
Write each number in scientific notation.

1. 72,000,000

2. 1,640,000,000

3. 0.00158

4. 326.5

Write each number in decimal form.

5. 4.1×10^{-4}

6. 3.91×10^{6}

Simplify each of the following to a number without any exponents.

7. 2^{-3}

8. $(-3)^4$

9. 25^0

10. $(-5)^{-2}$

11. 12^{-1}

Write each expression as a single power of x.

12. $(x^4)^3$

13. $\frac{x^{11}}{x^6}$

14. $x^{14} \cdot x^8$

15. $\frac{1}{x^{-9}}$

Simplify to an expression without parentheses.

16. $(4y)^2$

17. $(-2x^5)^3$

18. $\left(\frac{3m^4}{n^6}\right)^3$

19. Write an exponential function for this description: A culture of 2000 bacteria increases by 80% every day.

20. Write an exponential function for a scoop of ice cream that weighs 250 grams and loses $^1/_5$ of its mass every minute as it melts.

Describe which way the function $y=x^2$ was moved.

21. $y = x^2 + 7$

22. $y = (x + 4)^2$

List the coordinates of the vertex of the parabola or inflection point of the cubic function.

23. $y = (x - 5)^2 + 3$

24. $y = (x + 1)^3 - 6$

Calculator Section:

Calculate.

25. $(7.8 \times 10^7) + (9.4 \times 10^7)$

26. $(4.2 \times 10^{-9})(3.7 \times 10^5)$

27. Complete the table and graph the function. $y = 3(2)^x$.

x	y
-2	
-1	
0	
1	
2	

28. Write an exponential function and use it to find the amount: $10,000 compounded annually at 6% interest for 12 years.

29. Write an exponential function and use it to find the amount. A ball is dropped from 30 feet. It loses $1/8^{th}$ of its height with every bounce. How high would the ball go after 8 bounces?