Name:_____ Class Period:_____

Chapter 8 Test review

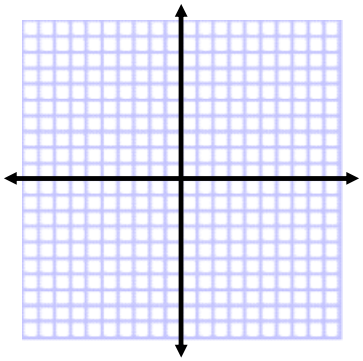
Lessons 8-1 to 8-5 Simplify each expression. Use only positive exponents.

1. $(2t)^{-6}$
2. $5m^5m^{-8}$
3. $(4.5)^4(4.5)^{-2}$
4. $(m^7t^{-5})^2$
5. $(x^2n^4)(n^{-8})$
6. $(w^{-2}j^{-4})^{-3}(j^7j^3)$
7. $(t^6)^3(m)^2$
8. $(3n^4)^2$
9. $\frac{r^5}{g^{-3}}$
10. $\frac{1}{a^{-4}}$
11. $\frac{w^7}{w^{-6}}$
12. $\frac{6}{t^{-4}}$
13. $\frac{a^2b^{-7}c^4}{a^5b^3c^{-2}}$
14. $\frac{(2t^5)^3}{4t^8t^{-1}}$
15. $\left(\frac{a^6}{a^7}\right)^{-3}$
16. $\left(\frac{c^5c^{-3}}{c^{-4}}\right)^{-2}$

Graph the following functions.

17. $y = 2 \cdot 3^x$

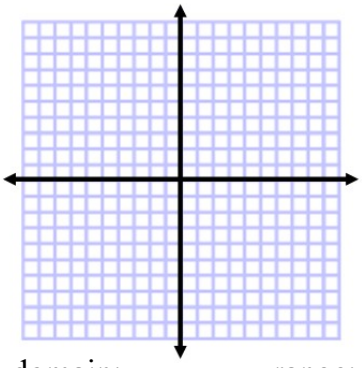
x	y
-2	
-1	
0	
1	
2	



domain: range:

18. $y = ½ \cdot 2^x + 1$

x	y
-2	
-1	
0	
1	
2	



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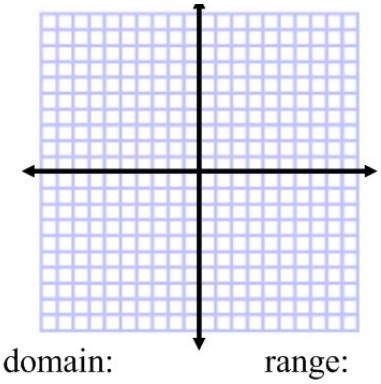
19. $y = 3^{x-1} - 2$

x	y
-2	
-1	
0	
1	
2	



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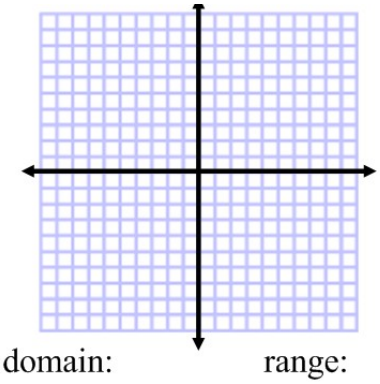
20. $y = 2^{x-2}$

x	y
-2	
-1	
0	
1	
2	



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Write a function and then solve.

21. Suppose an investment doubles in value every 5 years. This year the investment is worth $12,480. How much will it be worth 10 years from now? How much was it worth 5 years ago?

22. Which is greater, the amount in an account that pays 5% interest compounded quarterly for 5 years or the amount in an account that pays 5.5% compounded annually for 5 years? Assume the accounts start with the same amount. Show your work.

23. On January 1, 2000, Chessville had a population of 40,000 people. Its population increases 7% each year. On the same day, Checkersville had a population of 60,000 people. Its population decreases 4% each year. During what year will the population of Chessville exceed that of Checkersville?

24. For which function will values of y decrease as values of x increase?

A. $y = 12.5(1.325)^x$ **B.** $y = 300(1.06)^x$

C. $y = 5000(0.98)^x$ **D.** $y = 1.02^x$