

Algebra I

Review Chapter 7

Name _____

Simplify the expression. Write your answer using exponents.

1. $(-7)^9(-7)^2$

2. $(5^3)^8$

3. $\frac{12^2 \cdot 12^4}{12^3}$

Answers

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

In Exercises 4 and 5, use the table.

Unit	tera	giga	mega	kilo	hecto	deka
Meters	10^{12}	10^9	10^6	10^3	10^2	10^1

4. How many hectometers are there in 1 gigameter?

5. How many kilometers are there in 1 terameter?

Simplify the expression.

6. $x^4 \cdot x$

7. $(9pq)^2$

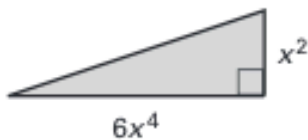
8. $(-5m^6)^2 \cdot m^3$

9. $\frac{1}{y} \cdot y^{11}$

10. $\left(-\frac{1}{t}\right)^5$

11. $\left(\frac{a^8}{2b}\right)^4$

12. Write and simplify an expression for the area of the triangle.



Simplify the expression. Write your answer using only positive exponents.

13. $2w^{-7}$

14. $(5g)^{-3}$

15. $\frac{1}{8c^{10}d^{-6}}$

Simplify.

16. $\left(-\frac{x^2}{y^{-4}}\right)^{-3}$

17. $\left(\frac{a^2b^{-4}c}{a^{-3}b}\right)^{-2}$

Evaluate the expression.

18. $\left(-\frac{1}{4}\right)^{-3}$

19. $\frac{6^{-10} \cdot 3^2}{6^{-5}}$

20. $\frac{2^{10}}{4^{-2}}$

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

Write a rule for the function.

21.

x	-2	-1	0	1	2
y	$\frac{1}{3}$	1	3	9	27

22.

x	-2	-1	0	1	2
y	$\frac{1}{8}$	$\frac{1}{2}$	2	8	32

23.

x	-2	-1	0	1	2
y	24	12	6	3	$\frac{3}{2}$

Answers

21. _____

22. _____

23. _____

24. _____

25. _____

26. _____

27. _____

In Exercises 24–26, use the following information.

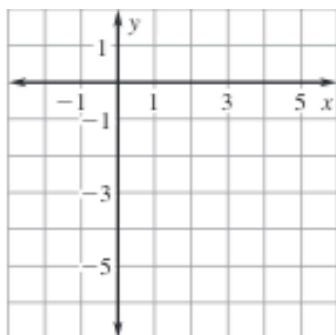
A house was bought 20 years ago for \$160,000. Due to inflation, its value has increased about 5% each year.

24. Write a function that models the value of the home over time.

25. Identify the initial value, the growth factor, and the growth rate.

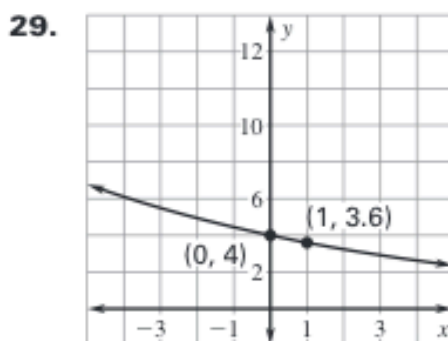
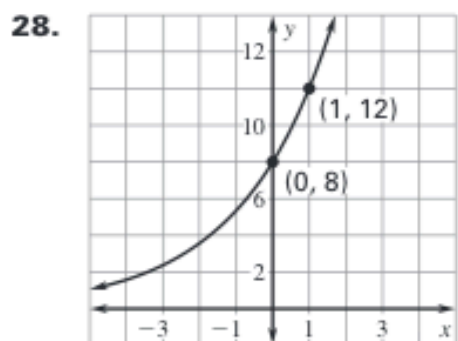
26. What is the home worth today?

27. Graph the function $y = -5\left(\frac{1}{3}\right)^x$ and compare it to the graph of $y = \left(\frac{1}{3}\right)^x$. Then identify its domain and range.



28. _____

Tell whether the graph represents exponential growth or exponential decay. Then write a rule for the function.



29. _____
