Practice New Skills: Exponents II

Simplify each expression.

1. $a^5 * a^3$	2. $(2a^2)^3$	3. $7a^0$
4. $\dfrac{5(x^2 y)^3}{10\,y}$	5. $\dfrac{-8a^6}{2a^4}$	6. $4(x^3 y^4)^2$
7. $\dfrac{-3x^2}{27x^2}$	8. $(2b)^0$	9. $\dfrac{(2\,y^2)^3 (y)^3}{10\,y^0}$

10. Simplify using the rules of exponents. Show your work. Your answer must be in scientific notation:

$$\frac{(6*10^4)(2*10^5)}{3*10^3} =$$

Thinking Back:
Foundational Skills Review on Expressions: Simplify #11-18.

11. $4(x + 3)$	12. $a(b - c)$
13. $-8\,y^2(y^3 - 2)$	14. $-3c^3(-2c + 4c^2)$
15. $a - 4a + 8b$	16. $xy + xy^2 + 3xy - 4xy^2$
17. $18a - (3a + b)$	18. $4(8a - 9) + 2(5a - 7)$

Applications with Percentage: Calculate the percentage each continent has of the earth's land area.

	Continent	Area in Standard Notation (km^2)	Percentage of Earth's Area
19.	Europe	9,938,000	
20.	Asia	44,579,000	
21.	Africa	30,065,000	
22.	North America	24,256,000	
23.	South America	17,819,000	
24.	Oceania	7,687,000	
25.	Antartica	13,209,000	

26. In the Day 4 Activity, you calculated the area of the earth covered by water. The Pacific Ocean makes up approximately 43% of the earth's water surface. Based on this information, what is the area of the Pacific Ocean?

27. Tokyo, Japan is the largest city in the world. With surrounding metropolitan areas, the population of the region is approximately 37 million people. What percentage is this of the world's population? (Refer back to Day 3 for world population figures.)

28. Over 67% the world's illiterate adults are found in only eight countries (Bangladesh, China, Egypt, Ethiopia, India, Indonesia, Nigeria, and Pakistan). The estimated number of illiterate adults in these countries is 5.26×10^8. Using this information, estimate the number of illiterate adults in the world.

Note: The following problem will be used in class. It is important that you write down exactly how you do the calculations even if you use a calculator.

29. Lisa's monthly expenses are given below:

Food	$240
Entertainment	$80
Rent	$550
Gas	$30
Electric	$42
Water/Sewer	$61

    a. How much does Lisa spend on food and entertainment in a year? (don't forget to record your work)

    b. Lisa's take home pay is $1535/month. How much does she have left over each month after paying rent and utilities (gas, electric, water/sewer)?

    c. *Estimate* the percentage of Lisa's pay that she spends on rent and utilities. Explain your estimation strategy.

Answer the following questions based on the Brain-Based Learning Part II.

30. Summarize what the author means by the phrase, "Not Too Hot – Not Too Cold, But Just Right."

31. Select one of the questions at the beginning of the reading to answer here.

32. Quote at least one finding described in the reading from studies on sleep and learning.

33. Indicate how **important** it is to you to challenge yourself without becoming over stressed in this class (with 10 being the highest).

0   1   2   3   4   5   6   7   8   9   10

Why did you choose this number and not a lower number?

34. On the line below, indicate how **confident** are you that can achieve a balance between challenge and stress in this class (with 10 being the highest).

0   1   2   3   4   5   6   7   8   9   10

Why did you choose this number and not a lower number?