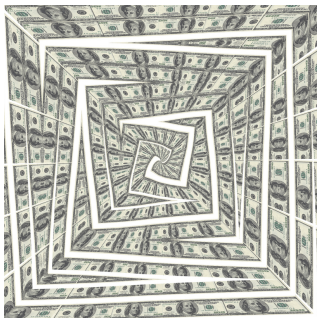

Ready, Set, Go!

Ready

Topic: Meaning of Exponents

1.
In the table below there is a column for the exponential form, the meaning of that form, which is a list of factors and the standard form of the number. Fill in the form that is missing.

Exponential form	List of factors	Standard Form
5^3	$5 \cdot 5 \cdot 5$	125
	$7 \cdot 7 \cdot 7 \cdot 7 \cdot 7 \cdot 7 \cdot 7$	
2^{10}		
		81
11^5		
	$3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$	
		625

Provide at least three other equivalent forms of the exponential expression. Use rules of exponents such as $3^5 \cdot 3^6 = 3^{11}$ and $(5^2)^3 = 5^6$ as well as division properties and others.

	1st Equivalent Form	2nd Equivalent Form	3rd Equivalent Form
2. $2^{10}=$			
3. $3^7=$			
4. $13^{-8}=$			
5. $7^{\frac{1}{3}}$			
6. 5^1			

Set

Topic: Finding equivalent expressions and functions.

Determine whether the expressions or functions in each problem below are equivalent. Justify why or why they are not equivalent.

7. $5(3^{x-1})$ $15(3^{x-2})$ $\frac{3}{5}(3^x)$

8. $64\ (2^{-x})$ $\frac{64}{2^x}$ $64\left(\frac{1}{2}\right)^x$

9. $3(x-1)+4$ $3x - 1$ $3(x-2) +7$

10. $50(2^{x+2})$ $25(2^{2x+1})$ $50(4^x)$

11. $30(1.05^x)$ $30\left(1.05^{\frac{1}{7}}\right)^{7x}$ $30\left(1.05^{\frac{x}{2}}\right)^2$

12. $20\ (1.1^x)$ $20\ (1.1^{-1})^{-1x}$ $20\left(1.1^{\frac{1}{5}}\right)^{5x}$

Go

Topic: Using rules of exponents

Simplify each expression.

13. $7^3 \cdot 7^5 \cdot 7^2$

14. $(3^4)^5$

15. $(5^3)^4 \cdot 5^7$

16. $x^3 \cdot x^5$

17. x^{-b}

18. $x^a \cdot x^b$

19. $(x^a)^b$

20. $\frac{y^a}{y^b}$

21. $\frac{(y^a)^c}{y^b}$

22. $\frac{(3^4)^6}{3^7} =$

23. $\frac{r^5 s^3}{rs^2} =$

24. $\frac{x^5 y^{12} z^0}{x^8 y^9} =$