TRS 92 Homework: Factoring

- Read textbook: Section 6.1 pp. 493-497 and Section 6.2 pp 503-509
- Complete the MML assignment: Factoring

Part A: Review New Skill -- Reversibility Among Forms

One of the most important concepts in mathematics is **reversibility** meaning processes that can be reversed to return to a previous form or step. You have already seen many examples of reversibility in your study of mathematics. The table below shows familiar examples of moving back and forth between equivalent expressions and numbers.

Complete the blanks with an equivalent form as indicated. No calculators allowed.

1. Factored Form: $4(x - 3)$	Simplified Form:
2. Factored Form:	Simplified Form: $-2x^2 - 6x$
3. Decimal: 0.7	Fraction:
4. Decimal:	Fraction: $\frac{9}{5}$
5. Percentage: 0.3%	Decimal:
6. Scientific Notation: 2.3×10^{-3}	Standard Notation:
7. Scientific Notation:	Standard Notation: 3,650,000,000
8. In lowest terms:	Not in lowest terms: $\frac{32}{8}$
9. Expanded Form: $5 \cdot 5 \cdot 5 \cdot 5 \cdot 5$	Exponent form:
10. Expanded Form (w/ positive exponent):	Exponent form: 3^{-2}
11. Compound Fraction: $\frac{\frac{1}{6}}{\frac{5}{3}}$	Simplified form: (may want to refer to #29-31 of your day 2 Homework for an example)

Part B: Thinking Back to Exponents

12. Simplify the following expressions using only positive exponents.

$3(a^2b)^3$	$(3a^2b)^3$	-3^2	$(-3)^2$
a^0	$5a^0$	$\frac{-8a^6}{-4a^2}$	
$\frac{36a^2b^{-3}}{4a^{-2}b^{-5}}$	$(6*10^{-3})(4*10^7)$	$\frac{36*10^7}{-9*10^3}$	

13. Identify the values of A and B that make each expression true:

$-3x^A(Bx^4 - 3xy) = -6x^7 + 9x^4y$

A=_____ B=_____

$(2x^4y^5)^A = 8x^{12}y^B$

A=_____ B=_____

$\frac{2^{-1}x^3y^{-2}z}{3xy^3z} = \frac{x^2}{Ay^B}$

A=_____ B=_____

$\frac{16x^3y^6}{4x^Ay^2} = \frac{By^4}{x^5}$

A=_____ B=_____

14. Many calculators and computer programs write scientific notation in the form in the table below. The "E" signifies a power of 10 so 1.19E+09 means 1.19 x 10^9. Calculate the population density for each country in people per square kilometer. (You may want to refer to your Day 6 Activity and notes for an example.)

	Population	Area in sq km	Population Density (in scientific notation)
India	1.19E+09	3.29E+06	
United States	3.11E+08	9.83E+06	
Indonesia	2.31E+08	1.90E+06	
Brazil	1.94E+08	8.51E+06	
Pakistan	1.71E+08	8.04E+05	
Bangladesh	1.62E+08	1.44E+05	
Nigeria	1.55E+08	9.24E+05	
Russia	1.42E+08	1.71E+07	