Chapter 5.1
Monomials Worksheet

Name: Key
Date: _____

Only (3) Two (8) Things (11) are Infinite. (6) The (10)
Universe (1) and Human (4) Stupidity (2), and I'm (5) Not (12)
sure (7) About (13) The (10) Former (9)

Simplify the monomials. Find its match in the answer key and write the word to create the quote from Albert Einstein. Assume no variable equals 0.

1. $x^4 \cdot x^7 = x^{11}$
2. $(3x^2)^3 = 3^3 \cdot x^{2\cdot 3} = 27x^6$
3. $(4xy^2)(2x^4y) = 8x^5y^3$
4. $\frac{x^8}{x^3} = x^5$
5. $(3x^{-2})(4y^3)(x^5y^2) = 12x^3y^5$
6. $\frac{x^2y^{-3}}{x^5y^2} = x^{-3}y^{-5} = \frac{1}{x^3y^5}$
7. $\frac{12z}{3x^{-3}y^2} = \frac{4z}{\frac{1}{x^3}y^2} = \frac{4z}{\frac{y^2}{x^3}} = \frac{4zx^3}{y^2}$
8. $\frac{14x^{-1}y^{-3}}{21x^{-5}} = \frac{2x^4}{3y^3}$
9. $\frac{4xyz^2}{20x^5y^{-2}} = \frac{1y^3z^2}{5x^4}$
10. $\left(\frac{x^2}{y^2}\right)^{-2} = \frac{x^{2\cdot(-2)}}{y^{2\cdot(-2)}} = \frac{x^{-4}}{y^{-4}} = \frac{1}{x^4\frac{1}{y^4}} = \frac{1}{\frac{x^4}{y^4}} = \frac{y^4}{x^4}$
11. $\left(\frac{2x^3}{3y^{-1}}\right)\left(\frac{6x^{-1}}{5y^7}\right) = \frac{12x^2}{15y^3} = \frac{4x^2}{5y^3}$
12. $\frac{(3xy)^{-2}}{z^{-4}} = \frac{1}{(3xy)^2\left(\frac{1}{z^4}\right)} = \frac{1}{9x^2y^2\left(\frac{1}{z^4}\right)} = \frac{1}{\frac{9x^2y^2}{z^4}} = \frac{z^4}{9x^2y^2}$
13. $\frac{(4x)(5y^{-4})}{(3xy^2)(2x^9)} = \frac{20xy^{-4}}{6x^{10}y^2} = \frac{10}{3x^9y^6}$

Answers	
Two	$\frac{2x^4}{3y^3}$
Only	$8x^5y^3$
Human	x^5
I'm	$12x^3y^5$
Infinite	$\frac{1}{x^3y^5}$
Not	$\frac{z^4}{9x^2y^2}$
About	$\frac{10}{3x^9y^6}$
Universe	x^{11}
Sure	$\frac{4x^3z}{y^2}$
Former	$\frac{y^3z^2}{5x^4}$
The	$\frac{y^4}{x^4}$
Things	$\frac{4x^2}{5y^3}$
Stupidity	$27x^6$