

Unit 2 Review

Name _____ Per _____

Simplify each of the following. Be sure to write your answer with positive exponents.

1. $\frac{p^2}{p^6}$	2. $c^6 \cdot c^5$	3. $(h^9)^{10}$
4. $(ab^3c^{-2})^{-3}$	5. $\left(\frac{x^7y^3}{x^2y}\right)^4$	6. $(5p^3q^2)(2p^4q)^2$
7. $\frac{m^{-8}n^{-2}}{m^5n^{-9}}$	8. $(u^{-3}v^5)\left(\frac{9u^{-5}v^2}{3u^6v^{-8}}\right)$	9. $\left(\frac{6x^{-3}y^5}{2xy^2z^6}\right)^5$

10. Fill in the blanks of the proof below. Either do the math or write in the appropriate property.

Prove: $2(x + y) - x \cdot 3 = -x + 2y$	
	Given
$2(x + y) - 3x$	
	Distributive Property
$2x - 3x + 2y$	
	Combine Like Terms

Simplify each expression below. Write the polynomial in standard form. Tell what the degree is, and what classification (monomial, binomial, trinomial, or general polynomial).

11. $2x - 5x^2 + 9x + 16 - 3$

Standard Form: _____

Degree: _____

Classification: _____

12. $3g - 2gh + 5g^2 + 5h - 2g - 15gh$

Standard Form: _____

Degree: _____

Classification: _____

13. $(3x^2 + 5)(3x^2 - 5)$

Standard Form: _____

Degree: _____

Classification: _____

14. $(3c^2 + 2c - 9) - (6c^2 - 4c + 10)$

Standard Form: _____

Degree: _____

Classification: _____

15. $3(g + 6) + g(g - 4)$

Standard Form: _____

Degree: _____

Classification: _____

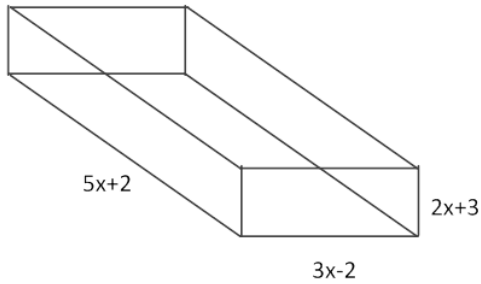
16. $(a - b + 3)(2a + 4b)$

Standard Form: _____

Degree: _____

Classification: _____

17. Find the volume of the rectangular prism below. $Volume = length \cdot width \cdot height = lwh$



18. A trapezoid's area can be found using the formula: $Area = \frac{1}{2} \cdot height \cdot (base_1 + base_2) = \frac{1}{2} h(b_1 + b_2)$. Find the area of a trapezoid where one of the bases is $(x-2)$, one of the bases is $(x+3)$, and the height is 8.

Write your own example of each property below.

19. Commutative Property	20. Associative Property	21. Distributive Property
20. Exponents: multiplication	21. Exponents: division	22. Exponents: power to a power
23. Exponents: negative	24. Exponents: zero	25. Exponents: one

26. Below is Mark's work for simplifying $(-2x^4 + 4x) - 3(3x^4 - 9)$. Highlight his mistake(s), explain what he did wrong, and find the correct answer.

$$\begin{aligned}
 (-2x^4 + 4x) - 3(3x^4 - 9) &= -2x^4 + 4x - 9x^4 - 27 \\
 &= -11x^8 + 4x - 27
 \end{aligned}$$

Answer Key

1. $\frac{1}{p^4}$	2. c^{11}	3. h^{90}	4. $\frac{c^6}{a^3b^9}$												
5. $x^{20}y^8$	6. $20p^{11}q^4$	7. $\frac{n^7}{m^{13}}$	8. $\frac{3v^{15}}{u^{14}}$												
9. $\frac{243y^{15}}{x^{20}z^{30}}$	10. <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2">Prove: $2(x+y) - x \cdot 3 = -x + 2y$</th> </tr> </thead> <tbody> <tr> <td>$2(x+y) - x \cdot 3$</td> <td>Given</td> </tr> <tr> <td>$2(x+y) - 3x$</td> <td>Commutative Property</td> </tr> <tr> <td>$2x + 2y - 3x$</td> <td>Distributive Property</td> </tr> <tr> <td>$2x - 3x + 2y$</td> <td>Commutative Property</td> </tr> <tr> <td>$-x + 2y$</td> <td>Combine Like Terms</td> </tr> </tbody> </table>		Prove: $2(x+y) - x \cdot 3 = -x + 2y$		$2(x+y) - x \cdot 3$	Given	$2(x+y) - 3x$	Commutative Property	$2x + 2y - 3x$	Distributive Property	$2x - 3x + 2y$	Commutative Property	$-x + 2y$	Combine Like Terms	11. $-5x^2 + 11x + 13$ Degree 2 Trinomial
Prove: $2(x+y) - x \cdot 3 = -x + 2y$															
$2(x+y) - x \cdot 3$	Given														
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$-x + 2y$	Combine Like Terms														
12. $5g^2 + g - 17gh + 5h$ Degree 2 General Polynomial	13. $9x^4 - 25$ Degree 4 Binomial	14. $-3c^2 + 6c - 19$ Degree 2 Trinomial	15. $g^2 - g + 18$ Degree 2 Trinomial												
16. $2a^2 + 6a + 2ab + 12b - 4b^2$ Degree 2 General Polynomial	17. $30x^3 + 37x^2 - 20x - 12$ cubic units	18. $8x + 4$ square units	#19-26 [examples will vary] 26. Correct answer: $-11x^4 + 4x + 27$												