

Algebra 2 Honors- Week 7 Homework

Monday-

Laws of Exponents Assignment

These problems have some of the most common mistakes that students make with exponents. Three of these problems are correct. If they are incorrect, explain the mistake and give the correct solution.

- | | | |
|--|--------------------------------|--|
| 1. $(x^3y^4)(x^3y^4) = 2x^3y^4$ | 2. $(3m^3)(2m^5) = 5m^8$ | 3. $(6a^3b)(2a^3b^4) = 12a^6b^4$ |
| 4. $(4p^2q^4)(p^2q) = 4p^4q^5$ | 5. $(5f^3)(7f^5) = 35f^{15}$ | 6. $(x^3y)^2 = x^5y^2$ |
| 7. $(m^2)^3 = m^{2^3} = m^8$ | 8. $(3m^3)^3 = 27m^9$ | 9. $(4g^2)(g^5) = 16g^5$ |
| 10. $(5x^7y^4)^5 = 5x^{35}y^{20}$ | 11. $(3a^4b^2)^3 = 9a^{12}b^6$ | 12. $(-m^2n)(2m^5n^4) = m^3n^3$ |
| 13. $(-m^2)(2m^5n^4) = (m^2)(2m^5n^4) = 2m^7n^4$ | | 14. $3x(4x^2y)^2 = (12x^3y)^2 = 144x^6y^2$ |
| 15. $w^4(3w^2 + 2w - 1) = 3w^6 + 2w - 1$ | | 16. $5xy^3(5x - y) = 25x^2y^3 - 5xy^4$ |
| 17. $3x^2(x^4 + 3x^2 + 2) = 3x^6 + 9x^4 + 6x^2 = 18x^{12}$ | | 18. $5a^2b(3a^2 + 2b^3) = 8a^4b + 7ab^4$ |

Tuesday- (Whatever you didn't finish in class)

Equations and Identities

1. Write down an example of an equation that has:

- (a) One solution. _____
- (b) Two solutions. _____
- (c) An infinite number of solutions. _____
- (d) No solutions. _____

2. For each of the following statements, indicate whether it is 'Always true', 'Never true' or 'Sometimes true'. Circle the correct answer. If you choose 'Sometimes true' then state on the line below when it is true. The first one is done for you as an example.

$x + 2 = 3$	Always true	Never true	Sometimes true
It is true when $x = 1$.			
$x - 12 = x + 30$	Always true	Never true	Sometimes true
It is true when _____			
$2(x + 6) = 2x + 12$	Always true	Never true	Sometimes true
It is true when _____			
$3(x - 2) = 3x - 2$	Always true	Never true	Sometimes true
It is true when _____			
$(x + 4)^2 = x^2 + 4^2$	Always true	Never true	Sometimes true
It is true when _____			
$x^2 + 4 = 0$	Always true	Never true	Sometimes true
It is true when _____			

3. Which of the equations in question 2 are also identities?

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In your own words, explain what is meant by an identity.

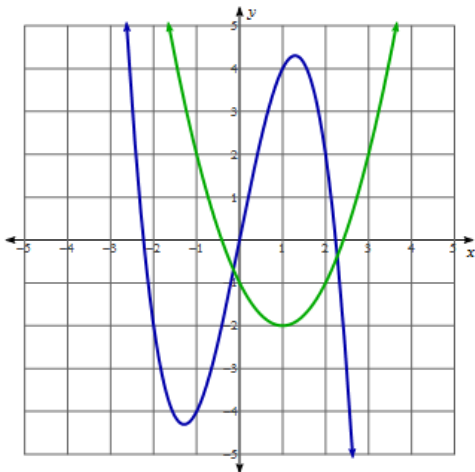
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Wednesday-

Operations with Polynomial Functions Assignment

Sketch the graph of the sum of these two functions. For 2 and 3, find the $f(x) + g(x)$ and $f(x) - g(x)$.

1.



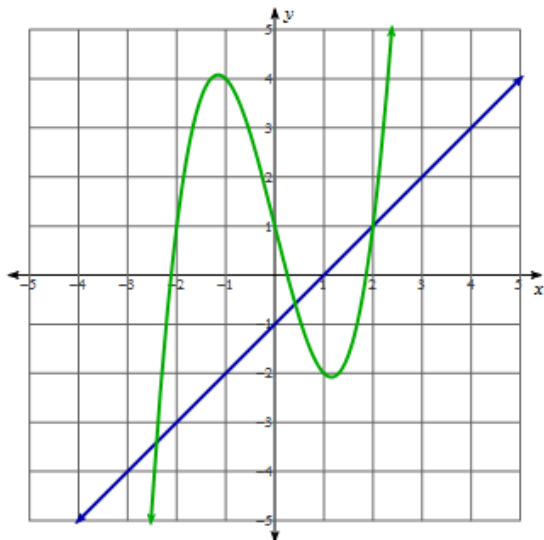
2. $f(x) = 2x^2 + 5x - 3$ and $g(x) = 5x^2 + 7x - 3$
3. $f(x) = 5x^3 - 7x^2 - 2x - 1$ and $g(x) = -3x^2 + 8x - 2$
4. Find two cubic functions whose sum is a quadratic.
5. Find two quadratic functions whose sum is $S(x) = x + 5$.
6. To print a novel, it costs \$500 plus \$4 per book. Each book sells for \$16.
 - a) $C(x)$ represents the cost per day of x books. Find $C(x)$.
 - b) $R(x)$ represents the total money earned from selling books. Find $R(x)$.
 - c) $P(x)$ represent the profit which takes the revenue $R(x)$ and subtracts the cost $C(x)$. Find $P(x)$.
 - d) Find the profit if 1200 books are sold.

Thursday-

Operations with Polynomial Functions Assignment

Sketch the product of these two functions.

1.



For 2 - 4, find the $f(x) \cdot g(x)$.

2. $f(x) = 5x - 3$ and $g(x) = 7x - 3$
3. $f(x) = x^2 - 2x - 1$ and $g(x) = 8x - 2$
4. $f(x) = x^2 + 5x - 3$ and $g(x) = 3x^2 + 2x + 1$
5. Find two polynomials whose product will be fifth degree.
6. Nikki recently painted a picture where the width is five inches longer than the length. She put a 3 inch wide mat around the picture.
 - a) Draw a diagram of the painting and its mat.
 - b) Write a function, $P(x)$, for the area of the painting.
 - c) Write functions, $L(x)$ and $W(x)$, for the length and width of the mat.
 - d) Write a function, $A(x)$, for the total area of both the mat and the painting.
 - e) Write a function, $M(x)$, for the area of the mat.

Name: _____ Date: _____ Block: _____

Friday-

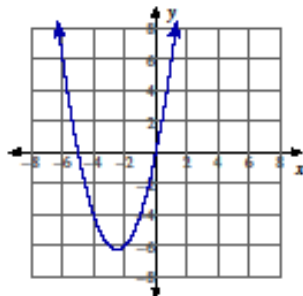
Factoring using GCF and Grouping

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Find the factors of the function graphically.

Date _____ Period _____

1)



Factor out the greatest common factor.

3) $15r - 27$

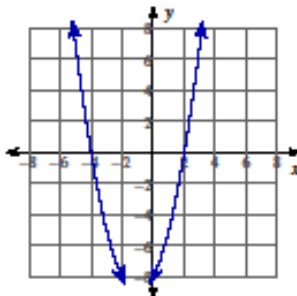
5) $5h^2j + hj$

Factor each completely.

7) $5n^3 + 10n^2 + 3n + 6$

9) $8uv - 20u + 2nv - 5n$

2)



4) $9z^2 + 81z$

6) $28r^4s^2 + 7r^3s - 35r^4s^3$

8) $3x^3 - 5x^2 + 6x - 10$

10) $12xy - 8x^2 - 15ay + 10ax$