Student: _____ **Instructor:** Allison Amico **Assignment:** MPA-1 (2016-17)
Date: _____ **Course:** Algebra II Period 8

*1. Given the following.

$f(-7) = 8$	$g(-7) = -3$
$f(0) = 2$	$g(0) = -9$
$f(1) = 3$	$g(1) = -8$
$f(3) = 9$	$g(3) = -3$

Find $\left(\frac{f}{g}\right)(3)$.

$\left(\frac{f}{g}\right)(3) =$ _____

*2. Simplify the following expression. Write the result using positive exponents only. Assume that all bases are not equal to 0.

$$\frac{-21a^9b}{7ab^7}$$

$\frac{-21a^9b}{7ab^7} =$ _____ (Simplify your answer.)

3. Let $f(x) = 4x - 1$. Find $(f \circ f)(2)$.

$(f \circ f)(2) =$ _____
(Simplify your answer.)

4. Solve the system of equations by the substitution method.

$$\begin{cases} 3x - y = 14 \\ 4x + 6y = -18 \end{cases}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- ○ **A.** The solution of the system is _____.
  (Simplify your answer. Type an ordered pair. Use integers or fractions for any numbers in the expression.)
- ○ **B.** There are infinitely many solutions.
- ○ **C.** There is no solution.

*5. Subtract the polynomials.

$(x^2 - 7x - 9) - (9x^2 + 4x + 3)$

The difference is _____. (Simplify your answer. Do not factor.)

*6. Multiply the monomials.

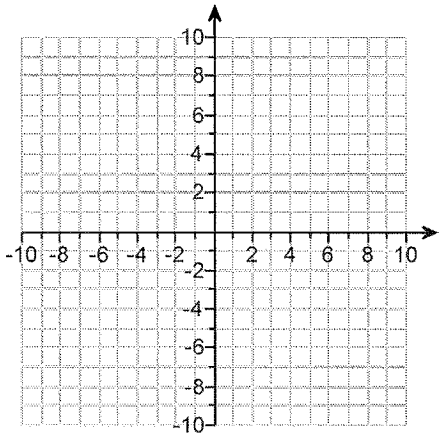
$$\left(-\frac{1}{9}a^6\right)\left(-\frac{1}{2}a^5\right)$$

$\left(-\frac{1}{9}a^6\right)\left(-\frac{1}{2}a^5\right) =$ _____ (Simplify your answer.)

7. Graph the solutions of the given system of linear inequalities.

$$\begin{cases} y < 4x - 1 \\ y \le x + 2 \end{cases}$$

Use the graphing tool to graph the system.



*8. Find the product.

$(x + 5)(x^2 + 2x + 7)$

$(x + 5)(x^2 + 2x + 7) =$ _____ (Simplify your answer.)

*9. Simplify the following expression. Write the result using positive exponents only. Assume that all bases are not equal to 0.

$$\frac{r}{r^{-7}r^{-6}}$$

$\frac{r}{r^{-7}r^{-6}} =$ _____

*10. Simplify the expression. Write the result using positive exponents only. Assume that all bases are not equal to 0.

$$\frac{p^2p}{p^{-6}}$$

$\frac{p^2p}{p^{-6}} =$ _____

11. Let $f(x) = 3x - 6$ and $g(x) = 4x^2$. Perform the function operation and then find the domain of the result.

$(f - g)(x)$

$(f - g)(x) =$ _____ (Simplify your answer.)

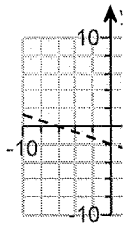
What is the domain of $(f - g)(x)$?

- ○ **A.** The domain of $f - g$ is the set of all $x \leq 0$.
- ○ **B.** The domain of $f - g$ is the set of all real numbers except $x = 0$.
- ○ **C.** The domain of $f - g$ is the set of all $x \geq 0$.
- ○ **D.** The domain of $f - g$ is the set of all real numbers.

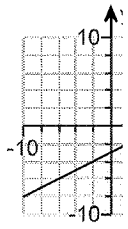
12. Identify the inequalities for which the ordered pair $(4, -2)$ is a solution.

Select all that apply.

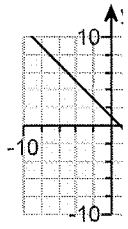
☐ **A.** $y > -\frac{1}{3}$



☐ **B.** $y \leq \frac{1}{2}x$



☐ **C.** $x + y$



13. Solve the system by substitution.

$$\begin{aligned} 2x + 4y &= 2 \\ x + 3y &= 4 \end{aligned}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- ○ **A.** There is one solution. The solution is _____.
  (Simplify your answer. Type an ordered pair. Use integers or fractions for any numbers in the expression.)
- ○ **B.** There are infinitely many solutions.
- ○ **C.** There is no solution.

14. Solve the system by elimination.

$$\begin{cases} 3x + 2y = 2 \\ 9x + 6y = 0 \end{cases}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- ○ **A.** The solution is _____.
  (Simplify your answer. Type an ordered pair. Use integers or fractions for any numbers in the expression.)
- ○ **B.** There are infinitely many solutions.
- ○ **C.** There is no solution.

15. Write the polynomial in standard form. Then classify the polynomial by degree and by number of terms.

$4x^5 + 3x^5 - x^5$

Write the polynomial in standard form.

_____ (Simplify your answer.)

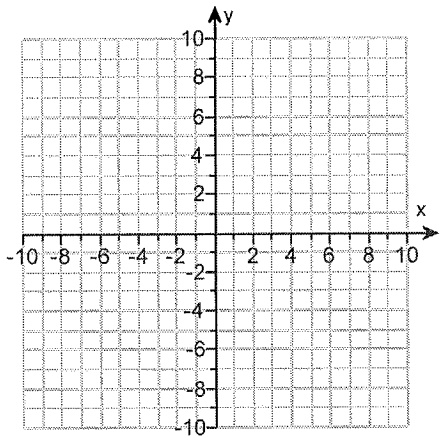
Classify the polynomial.

The polynomial is a (1) _____ (2) _____

(1)		(2)	
○	quintic	○	monomial.
○	quartic	○	trinomial.
○	cubic	○	polynomial of four terms.
○	quadratic	○	binomial.

16. Solve the system by graphing. Tell whether the system has one solution, infinitely many solutions, or no solution.

$2x + y - 3 = 0$
$4x + 2y = 10$



Use the graphing tool to graph the system.

Select the correct choice below and fill in any answer boxes present in your choice.

- ○ **A.** The solution of the system is _____. (Type an ordered pair.)
- ○ **B.** There are infinitely many solutions.
- ○ **C.** There is no solution.

*17. Simplify the expression. Assume that all bases are not equal to 0.

$(a^{-4}b^{6})^{-8}$

$(a^{-4}b^{6})^{-8} =$ _____ (Use positive exponents only.)

18. Let $f(x) = 5x + 2$ and $g(x) = x^2 - 4x + 3$. Perform the function operation and then find the domain.

$\frac{f(x)}{g(x)}$

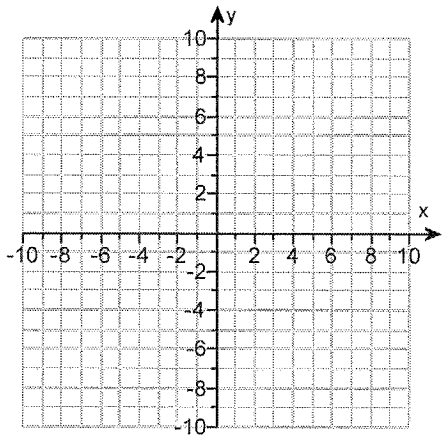
$\frac{f(x)}{g(x)} =$ _____ (Simplify your answer.)

What is the domain of $\frac{f(x)}{g(x)}$?

- ○ **A.** The domain of $\frac{f(x)}{g(x)}$ is the set of all $x > -3$ and $x < 1$.
- ○ **B.** The domain of $\frac{f(x)}{g(x)}$ is the set of all real numbers.
- ○ **C.** The domain of $\frac{f(x)}{g(x)}$ is the set of all $x > -1$ and $x < 3$.
- ○ **D.** The domain of $\frac{f(x)}{g(x)}$ is the set of all real numbers except $x = 3$ and $x = 1$.

19. Graph and solve the following system.

$$\begin{cases} y = 4x + 5 \\ y = -2x + 5 \end{cases}$$



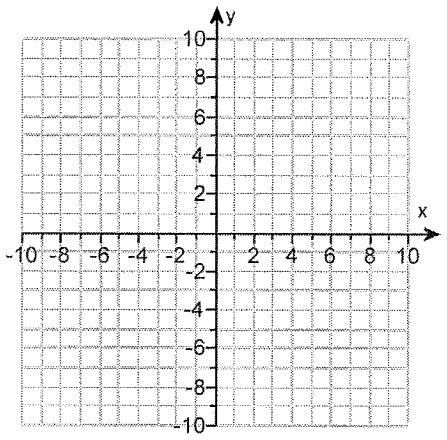
Use the graphing tool to graph the system.

Select the correct choice below and fill in any answer boxes present in your choice.

- ○ **A.** The solution is _____.
  (Simplify your answer. Type an ordered pair.)
- ○ **B.** There are infinitely many solutions.
- ○ **C.** There is no solution.

20. Graph the solution set of the system.

$$-2x - y \geq 6$$
$$y \geq -2$$
$$x \geq -8$$



Use the graphing tool to graph the system of inequalities.

21. Let $f(x) = 5x - 1$, $h(x) = \frac{x-2}{3}$.

Find $(f \circ h)(-7)$.

$(f \circ h)(-7) =$ _____
(Type an integer or a fraction.)

22. Let $f(x) = 5x - 2$ and $g(x) = x + 5$. Find $f(g(x))$ and $g(f(x))$.

$f(g(x)) =$ _____ (Simplify your answer.)

$g(f(x)) =$ _____ (Simplify your answer.)

*23. Add the polynomials.

$$(4x^2 - 4x) + (2x^2 - x)$$

The sum is _____. (Simplify your answer. Do not factor.)

*24. Multiply the monomials.

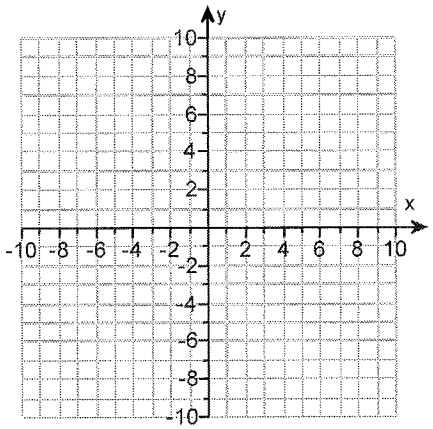
$(5x^5)(-3x)(2x^6)$

$(5x^5)(-3x)(2x^6) =$ _____ (Simplify your answer.)

25. Solve each system by graphing or using a table. Check your answers.

$$\begin{cases} x = -3 \\ y = -6 \end{cases}$$

Use the graphing tool to graph the system.



What is the solution of the system? Select the correct choice below and, if necessary, fill in the answer box to complete your answer.

- ○ **A.** The solution is _____. (Type an ordered pair.)
- ○ **B.** There are infinitely many solutions.
- ○ **C.** There is no solution.

26. Complete the ordered triple.

$$\begin{aligned} 5x - y + z &= 4 \\ 3x + 2y - 3z &= -9 \\ x - 3y + 2z &= 11 \end{aligned}$$

Write the solution as an ordered triple.

(_____, _____, _____)

*27. Simplify the expression. Write the result using positive exponents only. Assume that all bases are not equal to 0.

$$\left(\frac{a^{-6}b}{ab^8}\right)^{-2}$$

$$\left(\frac{a^{-6}b}{ab^8}\right)^{-2} = \text{_____}$$

*28. Identify the polynomial as a monomial, a binomial, or a trinomial. Give the degree of the polynomial.

$6y^2 + 10y^6 - 3$

Is the polynomial a monomial, binomial, or trinomial?

- ○ trinomial
- ○ monomial
- ○ binomial

What is the degree of the polynomial?

_____

29. Let $f(x) = x^2$ and $g(x) = x - 2$. Find $(f \circ g)(-4)$.

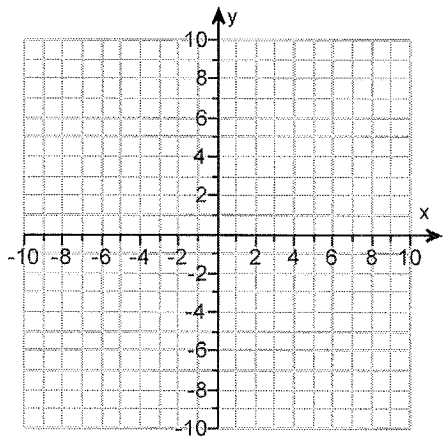
$(f \circ g)(-4) =$ _____ (Simplify your answer.)

30. Solve the system by graphing.

$$\begin{cases} 2x + 8y = 16 \\ x + y = -1 \end{cases}$$

Use the graphing tool to graph the system.

The solution of the system is _____.
(Simplify your answer. Type an ordered pair.)



1. -3

2. $-\frac{3a^8}{b^6}$

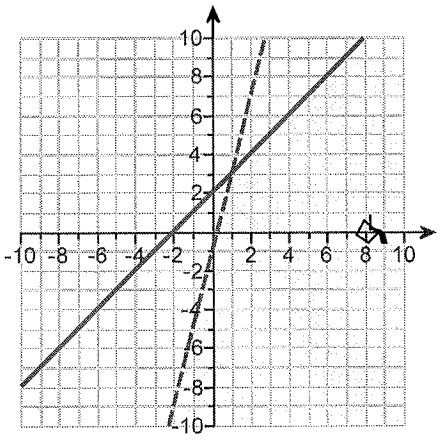
3. 27

4. A. The solution of the system is **(3, − 5)** .
(Simplify your answer. Type an ordered pair. Use integers or fractions for any numbers in the expression.)

5. $-8x^2 - 11x - 12$

6. $\frac{1}{18}a^{11}$

7.



8. $x^3 + 7x^2 + 17x + 35$

9. r^{14}

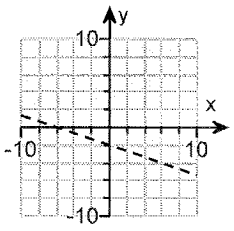
10. p^9

11. $-4x^2 + 3x - 6$

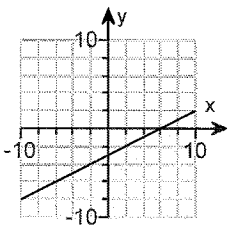
D. The domain of $f - g$ is the set of all real numbers.

12.

A. $y > -\frac{1}{3}x - 2$



, B. $y \leq \frac{1}{2}x - 3$



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13. A. There is one solution. The solution is **(−5,3)**.
(Simplify your answer. Type an ordered pair. Use integers or fractions for any numbers in the expression.)

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14. C. There is no solution.

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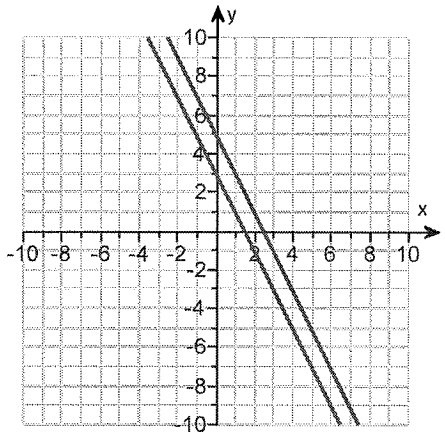
15. $6x^5$

(1) quintic

(2) monomial.

16.



C. There is no solution.

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17. $\frac{a^{32}}{b^{48}}$

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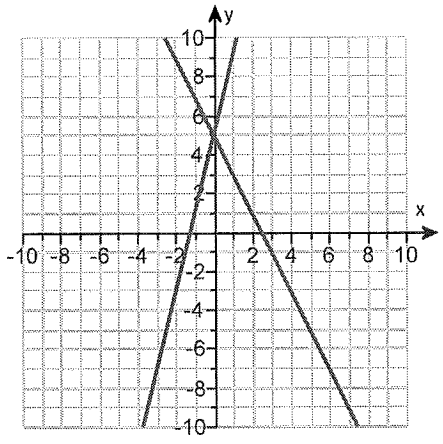
18. $\frac{5x+2}{x^2-4x+3}$

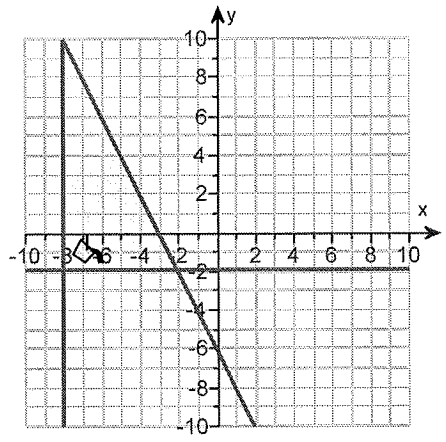
D. The domain of $\frac{f(x)}{g(x)}$ is the set of all real numbers except $x = 3$ and $x = 1$.

19.



A. The solution is **(0,5)** .(Simplify your answer. Type an ordered pair.)

20.



21. -16

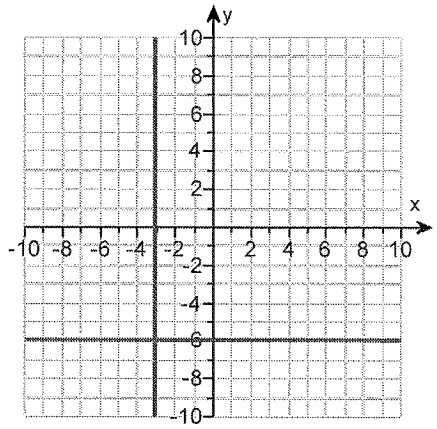
22. $5x + 23$

$5x + 3$

23. $6x^2 - 5x$

24. $-30x^{12}$

25.



A. The solution is **(−3, −6)**. (Type an ordered pair.)

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26. 0

−3

1

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27. $a^{14}b^{14}$

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28. trinomial

6

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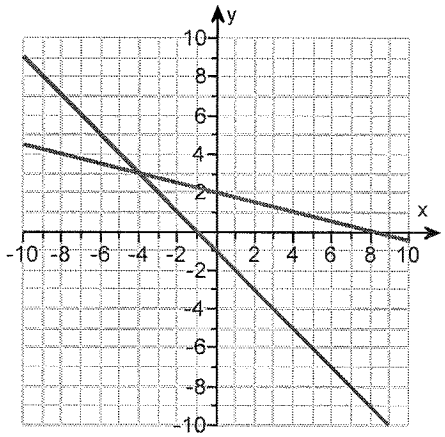
29. 36

30.



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Student: Allison Amico	**Course:** Algebra II Period 8
Instructor: Allison Amico	**Book:** *Algebra 2 Common Core (2015)
Date: 11/01/16	**Time:** 6:42am

View Question Details

Assignment name	MPA-1 (2016-17)
Chapter coverage	3, 5, 6
Displays with chapters	6
Pooling	Question pooling enabled
Total points	30
History ID	94627_T_5305837_3

Chapter View **Standard View**

#	Question ID	Objective	Credit for Unsimplified Answers	Student to show work	# Points
1	3.1.7	Use a graph or table to solve a system.		No	1
2	3.1.9	Use a graph or table to solve a system.		No	1
3	3.1.10	Use a graph or table to solve a system.		No	1
4	3.1.31	Use a graph or table to solve a system.		No	1
5	3.2.1	Solve systems of equations by substitution.		No	1
6	3.2.15	Solve systems of equations by substitution.		No	1
7	3.2.41	Solve systems of equations by elimination.		No	1
8	3.3.11	Solve a system of inequalities by graphing.		No	1
9	3.3.37	Determine if an ordered pair is a solution to a system of inequalities.		No	1
10	3.3.47	Solve a system of inequalities by graphing.		No	1
11	3.5.15	Solve a system in three variables using elimination.		No	1
12	5.1.17	Write polynomials in standard form and classify them by degree and number of terms.		No	1
13	6.6.10	Add, subtract, multiply, and divide functions.		No	1

#	Question ID	Objective	Credit for Unsimplified Answers	Student to show work	# Points
14	6.6.57	Add, subtract, multiply, and divide functions.		No	1
15	6.6.37	Find the composition of two functions.		No	1
16	6.6.68	Find the composition of two functions.		No	1
17	6.6.69	Find the composition of two functions.		No	1
18	6.6.73	Find the composition of two functions.		No	1
19	*8.1.15	Use all the rules and definitions for exponents to simplify exponential expressions.		No	1
20	*8.1.17	Use all the rules and definitions for exponents to simplify exponential expressions.		No	1
21	*8.1.23	Use all the rules and definitions for exponents to simplify exponential expressions.		No	1
22	*8.1.25	Use all the rules and definitions for exponents to simplify exponential expressions.		No	1
23	*8.1.30	Use all the rules and definitions for exponents to simplify exponential expressions.		No	1
24	*9.1.6	Understand the vocabulary used to describe polynomials.		No	1
25	*9.1.11	Add polynomials.		No	1
26	*9.1.29	Subtract polynomials.		No	1
27	*9.2.15	Multiply monomials.		No	1
28	*9.2.16	Multiply monomials.		No	1
29	*9.2.33	Multiply polynomials when neither is a monomial.		No	1
30	*10.1.49	Concept Extensions		No	1

OK