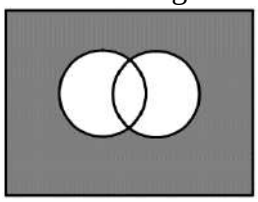
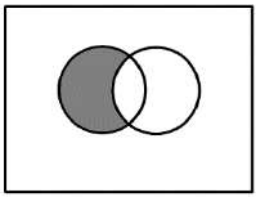
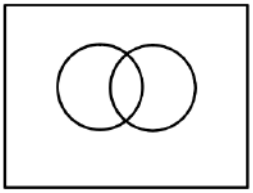
Name: _____ Algebra II – Test 1 9/21/2016

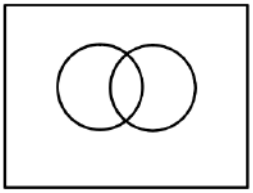
1) Name the following Venn Diagrams

a) 

b) 

2) Shade in the following Venn diagrams for the names given.

a) $A' \cap B$ 

b) $A' \cap B'$ 

3) Solve, graph, and write your answer in interval notation for the following inequalities.

a) $2x + 9 \leq 20$

b) $\frac{-3x-12}{6} > 10$

c) $-2(7x + 15) < 14$

d) $-2x + 9 - 10 \geq 3(9x + 16)$

4) Matching! Write the letter next the bracket that matches its description.

| | |
|---|---|
| _____ Square Brackets | A) Brackets to hold your braces together |
| _____ Curly Brackets | B) Used in interval notation which means to exclude the endpoint |
| _____ Dental Brackets | C) Used in set notation to represent a set |
| _____ Round Brackets | D) Used in your house to hold a piece of wood to the wall |
| _____ Shelf Brackets | E) Used in interval notation which means to include the endpoint |

5) Your mother gave you $20 to go to the mall. You went to a movie for $6. Then, you wanted to go shopping.

a) Write an inequality to represent your situation.

b) Solve your inequality and write you answer in interval notation.

c) Write the interval that makes sense to you AND explain your reasoning.

6) Find the equivalent sets for the following:

a) $\{2, 3, 4, 5\} \cap \{2, 4, 6, 8\}$

b) $\{2, 3, 4, 5\} \cup \{2, 4, 6, 8\}$

7) Write the following in <u>words</u>. Do NOT solve it.

a) $x + 5 \geq 10$

b) $9x - 1 < 6$

c) $6 - \frac{x}{3} > 4$

d) $7 - x \leq 8$

8) Solve, graph, and write your answer in interval notation for the following inequalities. Be sure to show all your work!!! Leave your answers in the simplest fraction form.

a) $-(6x + 6) - 5 > 1 - 6x$

b) $-1 + 5x \leq 3x + 2x$

9) Solve, graph, and write your answer in interval notation for the following inequalities.

| | |
|---|---|
| a) $x - 6 \leq 5x - 10$ AND $x \leq 3$ | b) $x \geq 4$ OR $2x + 7 \leq x + 10$ |
| c) $4x + 9 - 2x > x + 4$ OR $x + 1 > 0$ | d) $5x - 7 - 3x < -17$ AND $3x + 3 > 0$ |

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Algebra II – Test 2 10/18/2016

1) Identify the independent and dependent variables in the following scenarios.

a) The more questions I put on a test, the more problems you get wrong.

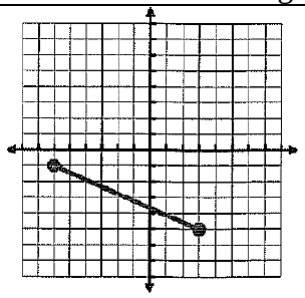
b) Your IQ goes up as you take more classes.

c) There are fewer seats to sit in as students come to class.

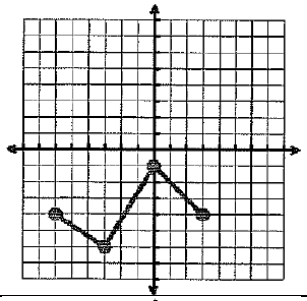
d) As the cold weather settles in ND, the more animals go into hibernation.

2) What is the domain and range of the following graphs?

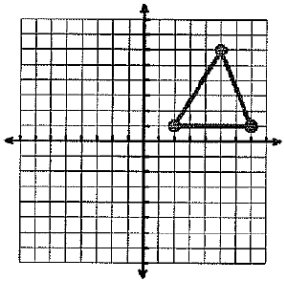
a)



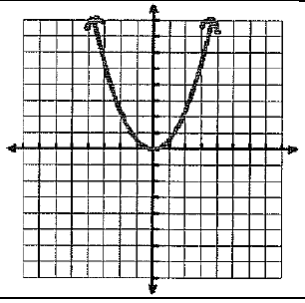
b)



c)



d)



3) Are the graphs from #2 functions?

a) b) c) d)

4)

a) With a power to a power, you _____ the exponents. (ex. $(x^2)^3$)

b) When writing a number in scientific notation, there should be _____ digit/s before the decimal.

c) When multiplying with the same _____, you keep the base and _____ the _____.

d) With domain, you always need to check for two things: _____ under a _____ and _____ in the _____ of a fraction. Otherwise the domain is automatically: (_____, _____ )

5) I pay $10/month for AmazonPrime. I also rent movies from Amazon that cost $3.99 for a month's rental of the movie.

a) Write an equation that represents how much I will be charged each month by Amazon.

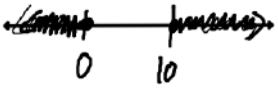
b) How much do I get charged for renting 5 movies in one month?

6) Find the domain of the following functions:

| | |
|---|---|
| a) $f(x) = \frac{x+8}{7x-14}$ | b) $f(x) = x^3 + 4$ |
| c) $f(x) = -\frac{x+8}{\sqrt{90-3x}}$ | d) $f(x) = \frac{5-x}{-50+10x} - \sqrt{3x+6}$ |

7) Graph and write the following as an **inequality**: all reals that are greater than 5 or less than 3.

8) Write an **absolute value inequality** to represent the following:
a) A specific deer has legs that start at $1ft$ long and can grow to $4ft$ long.

b) 


9) Simplify the following expressions. Leave your answers in exponent form with positive exponents.

| | |
|---|---|
| a) $\frac{15x^9y^5}{20x^4y^9}$ | b) $\left(\frac{7^4}{7^9}\right)^{11}$ |
| c) $2^{-3}x^9y^4 * 3^2x^5y^{-10}$ | d) $(4^3x^9y^3 * x^2)^6$ |

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Algebra II – Test 3 11/22/2016

1)
a) With radicals, we do not want a _____ in the _____, and we do not want a _____ in the _____.
b) When dividing with the same _____, you keep the base and _____ the _____.
c) In the radical $\sqrt[4]{\ }$, 4 is the _____. We say it is a _____ for _____ deal.

2) Simplify the following expressions. Leave your answers in exponent form with positive exponents.

| | |
|---|---|
| a) $\frac{15x^9y^5}{20x^4y^9}$ | b) $\left(\frac{7^4}{7^9}\right)^{11}$ |
| c) $2^{-3}x^9y^4 * 3^2x^5y^{-10}$ | d) $(4^3x^9y^3 * x^2)^6$ |

3) Simplify each polynomial expression.

| | |
|---|---|
| a) $3x^3 - 18x^4 + 5 + 7x^3 - 4x^2 - 9x^4$ | b) $(-x^2 + x^2y - y^2) - (-2y^2 + x^2 + xy^2)$ |
| c) $-20x - 16x + 7y - 15x$ | d) $-2x + 11 - 10$ |

4) Classify the following polynomials by their degree and number of terms.

| | |
|---|---|
| a) $7 + x^2$ | b) $x + 6^4$ |
| c) $x^3 + 3x$ | d) $2^4$ |

5) Rationalize/simplify the following radicals.

a) $\sqrt[2]{\frac{1}{3}}$

b) $\frac{8}{\sqrt[4]{x}}$

c) $\frac{1}{\sqrt[3]{27}}$

d) $\sqrt{\frac{y^4}{81}}$

6) Fill in the missing number to make the equation true.

a) $32^{\frac{1}{5}} = 16$

b) $16^{\frac{1}{2}} = 64$

7) Simplify the following radicals.

a) $\sqrt[4]{x^8y^{13}}$

b) $\sqrt[3]{32x^8y^{15}}$

c) $\sqrt{216x^5y^4x^3y}$

d) $(64x^{31}y^9)^{\frac{1}{5}}$

8) Put the following polynomials in standard form and identify the leading coefficient.

a) $9x^7 + 3x^4 - 8x^9$

b) $6x^2 - x^3 + 8^5 - 3x^4 + 2x^{10}$

9) Multiply the following polynomials.

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

b) $(x - 1)(2x^3 + 5x - 8)$

c) $(x - 3)^2$

d) $(3x^2 - 7)(6 - x)$

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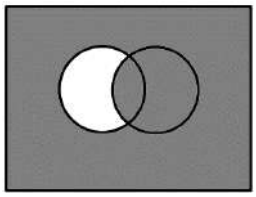
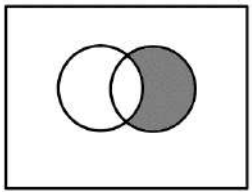
Algebra II Quiz 9/2/2016

1) Name the following Venn Diagrams

a)

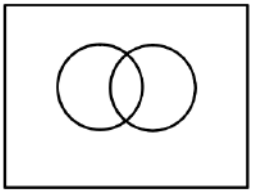


b)

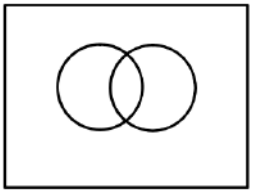


2) Shade in the following Venn diagrams for the names given.

a) $A' \cap B$



b) $A' \cap B'$



3) Evaluate the expression: $(2^3 + 5)^2 - 4$

4) Give two different ways of saying the expression: $3 - x$

a)

b)

5) Matching! Write the letter next the bracket that matches its description.

| | |
|---|---|
| _____ Square Brackets | A) Used in set notation to represent a set |
| _____ Curly Brackets | B) Used in interval notation which means to exclude the endpoint |
| _____ Round Brackets | C) Used in interval notation which means to include the endpoint |

6) $\{2, 3, 4, 5\} \cap \{2, 4, 6, 8\}$

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Algebra II Quiz 9/8/2016

1) Evaluate the expression: $(2^3 + 5)^2 - 4$

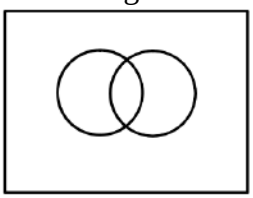
2) Solve, graph, and write your answer in interval notation for following inequality:

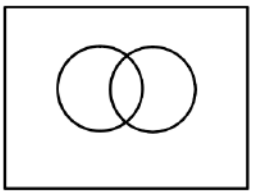
$$-13 \leq -2x + 9$$

3) Write the following inequality in WORDS: $t + 3 < 8$

4) Solve, graph, and write your answer in interval notation for following inequality: $2x + 5 \geq 9$

5) Shade in the following Venn diagrams for the names given.

a) $A \cap B$ 

b) $A \cup B$ 

6) $\{1, 2, 3, 4\} \cup \{2, 4, 6, 8\}$

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Algebra II Quiz 9/16/2016

1) Solve, graph, and write your answer in interval notation for following inequality: $2x + 9 \leq 20$

2) Solve, graph, and write your answer in interval notation for following inequality:

$$\frac{-3x - 12}{6} > 10$$

3) Solve, graph, and write your answer in interval notation for following inequality:

$$-2x + 9 - 10 \geq 3(9x + 16)$$

4) Solve, graph, and write your answer in interval notation for following inequality:

$$7 - y > 5 - y$$

5) Solve, graph, and write your answer in interval notation for following inequality

a) $5 \leq 4b - 3 < 9$

b) $x + 2 < -2 \; OR \; x - 2 > 2$

6) Translate the following into an inequality: Four more than twice a number is greater than half the number.

Algebra II Quiz 9/30/2016

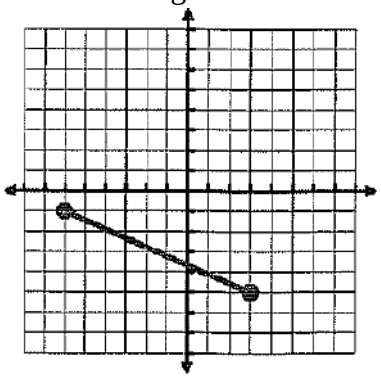
1) I pay $10/month for AmazonPrime. I also rent movies from Amazon that cost $3.99 for a month's rental of the movie.

a) Write an equation that represents how much I will be charged each month by Amazon.

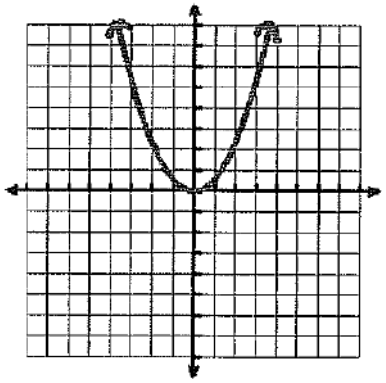
b) How much do I get charged for renting 5 movies in one month?

2) What is the domain and range of the following graphs? Are they functions?

a)



b)



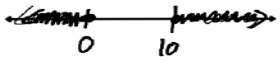
3) Identify the independent and dependent variables in the following scenarios.

a) The more questions I put on a test, the more problems you get wrong.

b) There are fewer seats to sit in as students come to class.

4) Write an **absolute value inequality** to represent the following:

a)




b) All real numbers less than -1 or greater than 4.

5) Solve the following inequalities, graph your answer, and write it in interval notation:

$$|3x - 8| \geq 4$$

6) Solve the following inequalities, graph your answer, and write it in interval notation:

$$|2x + 4| - 3 < 9$$

---

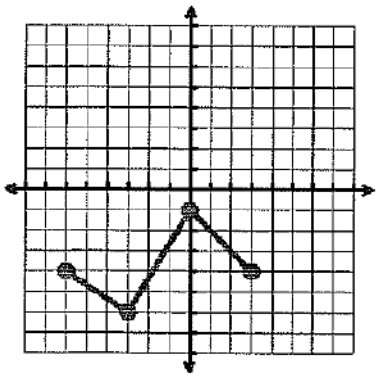
Algebra II Quiz 10/7/2016

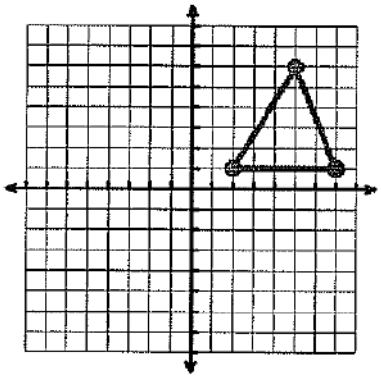
1) Find the domain of each of the following functions.

a) $f(x) = \frac{x+8}{7x-14}$

b) $f(x) = \sqrt{3x + 6}$

2) What is the domain and range of the following graphs? Are they functions?

a) 

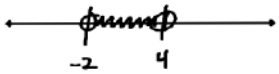
b) 

3) Identify the independent and dependent variables in the following scenarios.

a) The more questions I put on a test, the more problems you get wrong.

b) There are fewer seats to sit in as students come to class.

4) Write an **absolute value inequality** to represent the following:

a) 


b) All real numbers less than -1 or greater than 4.

5) Solve the following inequalities, graph your answer, and write it in interval notation:

$$|3x - 8| \geq 4$$

6) Solve the following inequalities, graph your answer, and write it in interval notation:

$$|2x + 4| - 3 < 9$$

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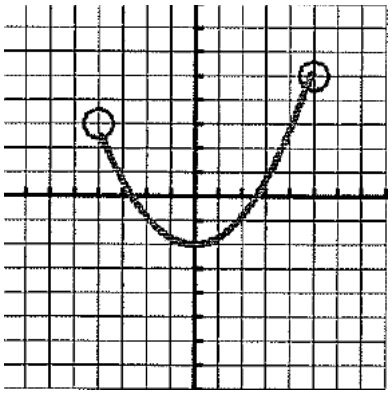
Algebra II Quiz 10/14/2016

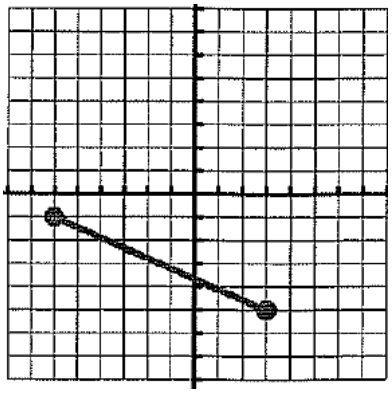
1) Find the domain of each of the following functions.

a) $f(x) = \frac{5-x}{-50+10x} - \sqrt{3x+6}$

b) $f(x) = x^3 + 4$

2) What is the domain and range of the following graphs? Are they functions?

a) 

b) 

3) a) With a power to a power, you _____ the exponents. (ex. $(x^2)^3$)
b) When writing a number in scientific notation, there should be _____ digit/s before the decimal.
c) When dividing with the same _____, you keep the base and _____ the _____.
d) With domain, you always need to check for two things: _____ under a _____ and _____ in the _____ of a fraction. Otherwise the domain is automatically: (_____, _____ )

4) Simplify the following expressions. Write your answers in scientific notation.
a) $.42 * 10^{11} * 37 * 10^{-10}$ | b) $\frac{(12345678*10^{-30})}{98765432*10^{-40}}$

5) Simplify the following expressions. Leave your answers in exponent form with positive exponents.
a) $\frac{15x^9y^5}{20x^4y^9}$ | b) $2^3x^9y^4 * 3^2x^5y^{-10}$

6) Simplify the following expressions. Leave your answers in exponent form.
a) $(4x^3 * x^8)^4$ | b) $\left(\frac{8^3}{8^9}\right)^6$

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Algebra II Quiz 10/28/2016
1) Simplify the following radicals.
a) $\sqrt{32}$ | b) $\sqrt[3]{81x^8y^3}$

2) Simplify the following radicals.
a) $\sqrt[4]{1250}$ | b) $\sqrt[3]{-80x^7}$

3) a) With a power to a power, you _____ the exponents. (ex. $(x^2)^3$)
b) When writing a number in scientific notation, there should be _____ digit/s before the decimal.
c) When multiplying with the same _____, you keep the base and _____ the _____.
d) In the radical $\sqrt[4]{\ }$, 4 is the _____. We say it is a _____ for _____ deal.

4) Simplify the following expressions. Write your answers in scientific notation.
a) $.42 * 10^{11} * 37 * 10^{-10}$ | b) $\frac{(12345678*10^{-30})}{98765432*10^{-40}}$

5) Simplify the following expressions. Leave your answers in exponent form with positive exponents.
a) $\frac{12x^9y^5}{24x^{-4}y^9}$ | b) $2^3x^9y^4 * 3^2x^5y^{-10}$

6) Simplify the following expressions. Leave your answers in exponent form.

a) $(4x^3 * x^8)^4$

b) $2w^0x^{-3}y^5z^{-4}$

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Algebra II Quiz 11/4/2016

1) Simplify and rationalize the following radicals.

a) $\sqrt{\frac{7}{16}}$

b) $\sqrt[3]{\frac{5}{27x^9}}$

2) Simplify and rationalize the following radicals.

a) $\sqrt[3]{\frac{3}{2x}}$

b) $\frac{7}{\sqrt[3]{4x}}$

3) a) With radicals, we do not want a _____ in the _____, and we do not want a _____ in the _____.

b) In the radical $\sqrt[4]{\ }$, 4 is the _____. We say it is a _____ for _____ deal.

4) Simplify the following expressions. Write your answers in scientific notation.

a) $5.32 * 10^{15} * 0.37 * 10^{-20}$

b) $\frac{(12345678*10^{-40})}{98765432*10^{-30}}$

5) Simplify and rationalize the following radicals.

a) $\sqrt{\frac{12x^5}{7y}}$

b) $\frac{\sqrt[3]{y^{10}}}{\sqrt[3]{x^{11}}}$

6) Simplify the following expressions.

a) $124^{\frac{1}{2}} + 243^{\frac{1}{5}}$

b) $9^{\frac{5}{2}}$

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Algebra II Quiz 11/18/2016

1) Classify the following polynomials by their degree and number of terms.

a) $x^2 + 3x - 2$

b) $x^3 + 6^4x$

2) Put the following polynomials in standard form and identify the leading coefficient.

a) $7x^3 + x - 5x^6$

b) $5x^2 - x^5 + 8 - 3x^3 + 2x$

3) What does F.O.I.L. stand for?

4) Multiply the following expressions.

a) $-2x(x - 3)$

b) $2x^2(x^3 + 5)$

5) Multiply the following expressions.

a) $(x + 2)(3x - 1)$

b) $(x - 2)(x^2 + 2x - 3)$

6) Simplify each polynomial expression.

a) $4m^3 + 7m^4 - 2 + 2m^3 - 2m^2 + 6m^4$ | b) $(-x^2 + 9xy - 2y) - (-y + 2x^2 + 14xy)$

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Algebra II Quiz 12/2/2016

1) In the experiment, each nut has a mass of 3.2g and each bolt has a mass of 7.7g. Answer the following questions concerning the experiment.

a) If you start with 15 nuts on the scale and take off 3, how much will the scale read? _____

b) If you put 10 bolts on the scale, how much will the scale read? _____

c) If you put 4 nuts and 9 bolts on the scale, how much would it read? _____

d) In the experiment with 12 nuts, the equation to represent the data was: $y = -3.2x + 38.4$

i) What did 3.2 represent?

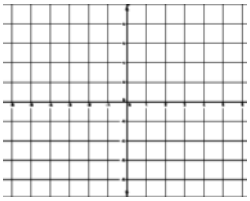
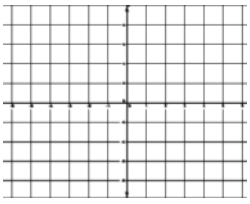
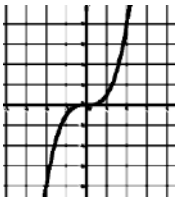
ii) What did 38.4 represent?

iii) Why is 3.2 negative?

2) Classify the following polynomials by their degree and number of terms.

a) $7x^3$ | b) $5x^2 - x^5 + 8 - 3x^3 + 2x$

3) Fill in the missing information.

| Function Notation | Name | Graph |
|---|---|---|
| $f(x) = x^2$ | |  |
| | Square root |  |
| | |  |

4) Multiply the following expressions.

a) $(x - 3)^2$ | b) $(x + 5)^2$

5) Multiply the following expressions.

a) $(x + 2)(x - 2)$ | b) $(x - 4)(x + 4)$