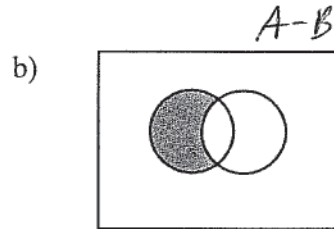Name: __Key__
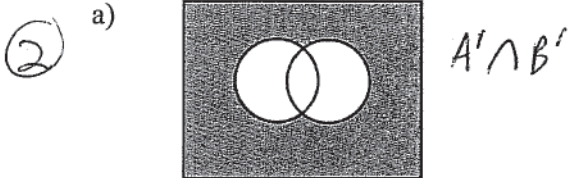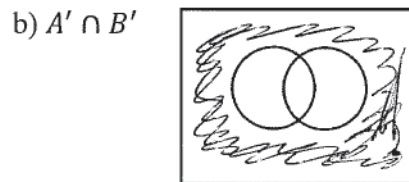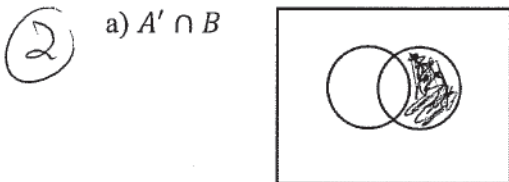
Algebra II – Test 1

9/21/2016
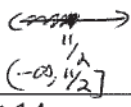
1) Name the following Venn Diagrams
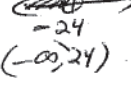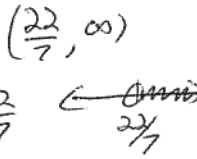
a)

 $A' \wedge B'$

b) $A - B$.

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

a) $A' \cap B$

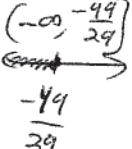b) $A' \cap B'$

$\frac{1}{16}$
$\frac{3}{48}$

$2x \leq 11 \qquad x \leq \frac{11}{2}$

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

a) $2x + 9 \leq 20$

$\left(-\infty, \frac{11}{2}\right]$

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

$-3x - 12 > 60$
$-3x > 72$
$x < 24$

$(-\infty, 24)$

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

$-14x - 30 < 14$
$+30 \quad 30$

$\frac{-14x < 44}{-14 \quad -14}$

$x > \frac{22}{7}$

$\left(\frac{22}{7}, \infty\right)$

$\frac{22}{7}$

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

$-2x - 1 \geq 27x + 48$

$\frac{-49 \geq 29x}{29 \quad 29}$

$x \leq \frac{-49}{29}$

$\left(-\infty, \frac{-49}{29}\right]$

$\frac{-49}{29}$

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

__E__ Square Brackets

__C__ Curly Brackets

__A__ Dental Brackets

__B__ Round Brackets

__D__ Shelf Brackets

A) Brackets to hold your braces together

B) Used in interval notation which means to exclude the endpoint

C) Used in set notation to represent a set

D) Used in your house to hold a piece of wood to the wall

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.

(4)

a) Write an inequality to represent your situation. $x + 6 \le 20$

b) Solve your inequality and write you answer in interval notation. $x \le 14$ $(-\infty, 14]$

c) Write the interval that makes sense to you AND explain your reasoning.
$[0, 14]$ *cannot spend (-) $

6) Find the equivalent sets for the following:

(3)

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

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

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

(8)

a) $x + 5 \ge 10$ x plus 5 is greater than or equal to 10   b) $9x - 1 < 6$ 9 time x minus 1 is less than 6

c) $6 - \frac{x}{3} > 4$ 6 minus x divided by 3 is greater than 4   d) $7 - x \le 8$ 7 minus x is less than or equal to 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.

(9)

a) $-(6x + 6) - 5 > 1 - 6x$
$-6x - 6 - 5 > 1 - 6x$
$-11 > 1$ no soln.

b) $-1 + 5x \le 3x + 2x$
$-1 \le 0$ All reals,
$(-\infty, \infty)$

9) Solve, graph, and write your answer in interval notation for the following inequalities.
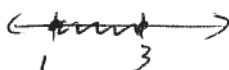
(12)

a) $x - 6 \le 5x - 10$ AND $x \le 3$ c) $x \ge 4$ OR $2x + 7 \le x + 10$

b) $4x + 9 - 2x > x + 4$ OR $x + 1 > 0$ d) $5x - 7 - 3x < -17$ AND $3x + 3 > 0$
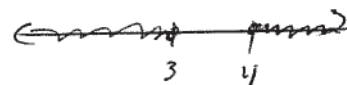
$4 \le 4x$
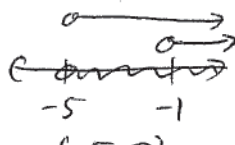$x \ge 1$ and $x \le 3$

$[1, 3]$

$x \ge 4$ or $x \le 3$

3   4

$(-\infty, 3] \cup [4, \infty)$

$x > -5$ or $x > -1$

-5   -1

$2x - 7 < -17$
$2x < -10$
$x < 5$ and.

$x > -1$

no soln

Name: _ce√_
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.
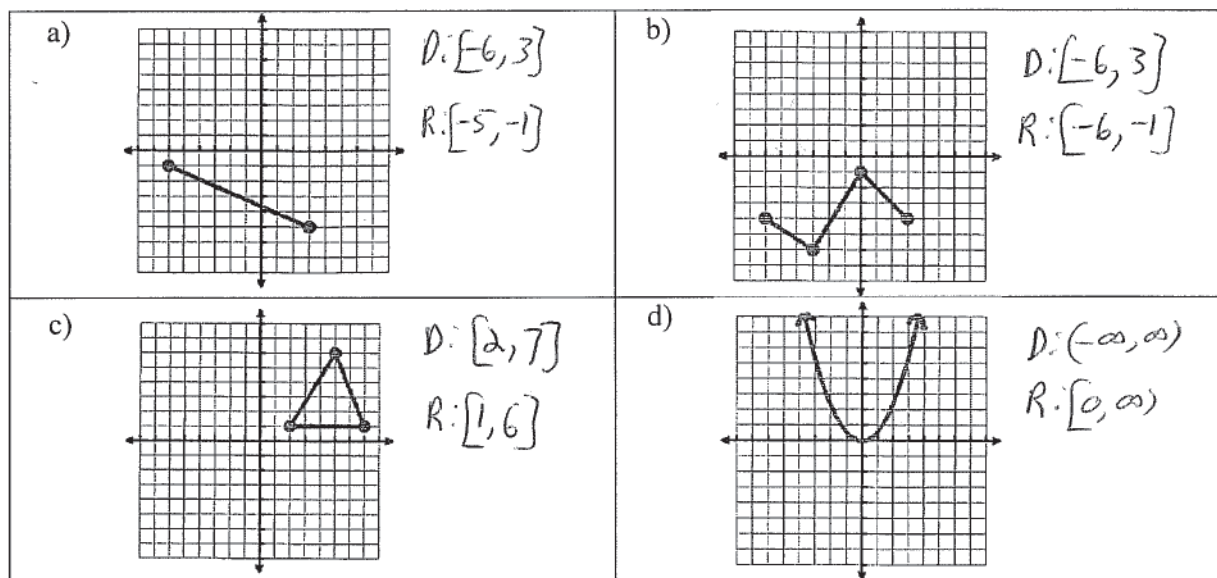
(4)

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?

(8)

a)

$D: [-6, 3]$
$R: [-5, -1]$

b)

$D: [-6, 3]$
$R: [-6, -1]$

c)

$D: [2, 7]$
$R: [1, 6]$

d)

$D: (-\infty, \infty)$
$R: [0, \infty)$

3) Are the graphs from #2 functions?

(9)

a) Yes   b) yes   c) no   d) yes.

4)
a) With a power to a power, you __multiply__ the exponents. (ex. $(x^2)^3$)
b) When writing a number in scientific notation, there should be __1__ digit/s before the decimal.

(6)

c) When multiplying with the same __base__, you keep the base and __add__ the __exponents__.
d) With domain, you always need to check for two things: __(−)__ under a __√__ and __zero__ in the __denominator__ of a fraction. Otherwise the domain is automatically: $(-\infty, \infty)$

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.

(3)

$$f(x) = 10 + 3.99x$$

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

$$f(5) = \cancel{49.95}$$
$$29.95.$$

6) Find the domain of the following functions:

(12)

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

$7x - 14 = 0$

$x = 2$

$\boxed{(-\infty, 2) \cup (2, \infty)}$
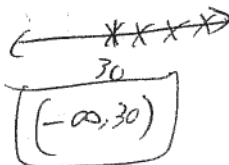
b) $f(x) = x^3 + 4$

$(-\infty, \infty)$
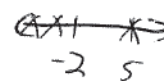
c) $f(x) = -\dfrac{x+8}{\sqrt{90-3x}}$

$90 - 3x < 0$

$-3x < -90$

$x > 30$

$x = 30$

$\overset{30}{\longleftarrow \!\!\! *\!*\!*\!* \!\!\! \longrightarrow}$

$\boxed{(-\infty, 30)}$

d) $f(x) = \dfrac{5-x}{-50+10x} - \sqrt{3x+6} < 6$

$\overset{\scriptstyle \shortmid}{6}$

$x = 5$

$x < -2$

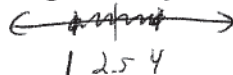$\overset{-2 \quad 5}{\longleftarrow\!\!\circ\!\!+\!\!+\!\!\circ\!\!\longrightarrow}$

$[-2, 5) \cup (5, \infty).$

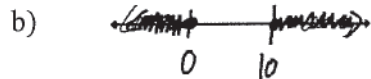7) Graph and write the following as an **inequality**: all reals that are greater than 5 or less than 3.

(3)

$x > 5$ or $x < 3$.

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.

(6)

$\overset{1 \quad 2.5 \quad 4}{\longleftarrow\!\!+\!\!+\!\!+\!\!+\!\!\longrightarrow}$

$|x - 2.5| \le 1.5$

b) $\overset{0 \quad\quad 10}{\longleftarrow\!\!+\!\!+\!\!+\!\!\cdot\!\!\cdot\!\!+\!\!\longrightarrow}$

$|x - 5| \ge 5$

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

(12)

a) $\dfrac{15x^9y^5}{20x^4y^9}$

$\boxed{\dfrac{3x^5}{4y^4}}$

b) $\left(\dfrac{7^4}{7^9}\right)^{11}$

$\boxed{\left(\dfrac{1}{7^5}\right)^{11}}$

$\boxed{\dfrac{1}{7^{55}}}$

c) $2^{-3}x^9y^4 * 3^2x^5y^{-10}$

$\dfrac{1}{8}$

$\boxed{\dfrac{9x^{14}}{8y^6}}$

d) $(4^3x^9y^3 * x^2)^6$

$\boxed{4^{18}x^{66}y^{18}}$

Name: _key_
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 ___√___.

(6)

b) When dividing with the same ___base___, you keep the base and ___subtract___ the _exponents_.
c) In the radical $\sqrt[4]{\ }$, 4 is the ___index___. We say it is a __4__ for __⊥__ deal.

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

(12)

a) $\dfrac{15x^9y^5}{20x^4y^9}$ $\dfrac{3x^5}{4y^4}$

b) $\left(\dfrac{7^4}{7^9}\right)^{11}$ $\left(\dfrac{7}{7^5}\right)^{11} = \dfrac{1}{7^{55}}$

c) $2^{-3}x^9y^4 * 3^2x^5y^{-10}$

$\dfrac{1}{8}$ $\dfrac{9x^{14}}{8y^6}$

d) $(4^3x^9y^3 * x^2)^6$

$4^{18}x^{66}y^{18}$

3) Simplify each polynomial expression.

(8)

a) $3x^3 - 18x^4 + 5 + 7x^3 - 4x^2 - 9x^4$

$-27x^4 + 10x^3 - 4x^2 + 5$

b) $(-x^2 + x^2y - y^2) + (-2y^2 + x^2 + xy^2)$

$-2x^2 + y^2 + x^2y - xy^2$

c) $-20x - 16x + 7y - 15x$

$-51x + 7y$

d) $-2x + 11 - 10$

$-2x + 1$

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

(8)

a) $7 + x^2$ quadratic binomial

b) $x + 6^4$ linear binomial

c) $x^3 + 3x$ cubic binomial

d) 2^4 constant monomial.

5) Rationalize/simplify the following radicals.

(12)

a) $2\sqrt{\dfrac{1 \cdot 3}{3 \cdot 3}}$ $\dfrac{1}{3}\sqrt{3}$

b) $\dfrac{8}{\sqrt[4]{x} \cdot x^3}$ $\dfrac{8\sqrt[4]{x^3}}{x}$

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

$3 \wedge 9$

$3 \wedge 3$

d) $\sqrt{\dfrac{y^4}{81}}$ $\dfrac{y^2}{9}$

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

(6)

a) $32^{\frac{④}{5}} = 16$ $\sqrt[5]{32} = 2$ $2^{\boxed{}} = 6$

b) $16^{\frac{③}{2}} = 64$ $\sqrt{16} = 4$ $4^{\boxed{}} = 64$

7) Simplify the following radicals.

(12)

a) $\sqrt[4]{x^8 y^{13}}$ $x^2 y^3 \sqrt[4]{y}$

b) $\sqrt[3]{32x^8 y^{15}}$ $\boxed{2x^2 y^5 \sqrt[3]{4x^2}}$

$\overset{4}{\underset{2 \ 2}{\wedge}} \quad \overset{8}{\underset{4 \ 2}{\wedge}}$

c) $\sqrt{216x^5 y^4 x^3 y}$ $\boxed{6x^4 y^2 \sqrt{6y}}$

$\overset{6 \quad 36}{\wedge} \quad x^4 y^5$

d) $(64x^{31} y^9)^{\frac{1}{5}}$ $\sqrt[5]{2^6 \cdot x^{31} y^9}$

$2x^6 y \sqrt[5]{2xy^4}$

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

(4)

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

$-8x^9 + 9x^7 + 3x^4$ $\dfrac{LC}{-8}$

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

$2x^{10} - 3x^4 - x^3 + 6x^2 + 8^5$ $\dfrac{LC}{2}$

9) Multiply the following polynomials.

(12)

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

$2x^3 - 10x^2 - 22x + 12$

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

$2x^4 - 2x^3 + 5x^2 - 13x + 8$

c) $(x - 3)^2$

$x^2 - 6x + 9$

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

$18x^2 - 3x^3 - 42 + 7x$

$\boxed{-3x^3 + 18x^2 + 7x - 42}$

$\times$	x^2	$-7x$	$+3$
$2x$	$2x^3$	$-14x^2$	$6x$
4	$4x^2$	$-28x$	12

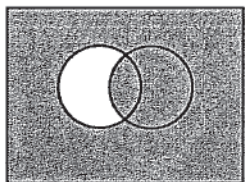| $\times$	$2x^3$	$5x$	-8
x	$2x^4$	$5x^2$	$-8x$
-1	$-2x^3$	$-5x$	$+8$

Name: _key_

9/2/2016

Algebra II Quiz

1) Name the following Venn Diagrams

a) $(A-B)'$
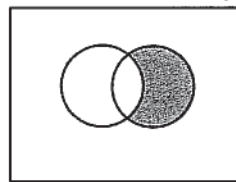
b) $B-A.$
     ~~A-B.~~

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

a) $A' \cap B$
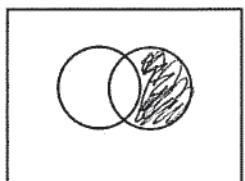
b) $A' \cap B'$
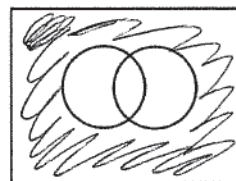
3) Evaluate the expression: $(2^3 + 5)^2 - 4$ $= \boxed{165}$

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

a) 3 minus x

b) 3 subtract x

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

_C_ Square Brackets

_A_ Curly Brackets

_B_ Round Brackets

A) Used in set notation to represent a set

B) Used in interval notation which means to exclude the endpoint

C) Used in interval notation which means to include the endpoint

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

Bonus: Who am I, who am I married to, what do I do, and where do I live?

nobody   no one   nothing   no where

Name:_____
9/8/2016
Algebra II Quiz
1) Evaluate the expression: $(2^3 + 5)^2 - 4$

$8 + 5$

$13^2 - 4 \quad = \boxed{165}$

2) Solve, graph, and write your answer in interval notation for following inequality: $-13 \le -2x + 9$

$ -9 -9$

$\overline{-22 \le -2x}$

$\overline{-2} \quad \overline{-2}$

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

t plus 3 is less than 8

$11 \ge x \quad (-\infty, 11]$

$x \le 11 \quad \xleftarrow{}$

11

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

$ -5 \ -5$

$\overline{2x \ge 4}$

$\overline{2} \quad \overline{2}$

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

$x \ge 2 \quad \xleftarrow{}$

2

a) $A \cap B$

b) $A \cup B$

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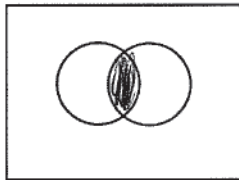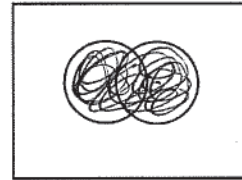
6) $\{1, 2, 3, 4\} \cup \{2, 4, 6, 8\}$

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

Name: Key

9/16/2016

Algebra II Quiz

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

$$x \leq \frac{11}{2} \qquad (-\infty, \frac{11}{2}]$$

2) Solve, graph, and write your answer in interval notation for following inequality: $\frac{-3x-12}{6} > 10$

$$-3x - 12 > 60$$
$$-3x > 72$$
$$x < -24$$

$$(-\infty, -24)$$

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

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

$$-2x - 1 \geq 27x + 48$$
$$+2x - 48 \quad +2x \quad -48$$

$$\frac{-49}{29} \geq \frac{29x}{29} \qquad x \leq \frac{-49}{29}$$

4) Solve, graph, and write your answer in interval notation for following inequality: $7 - y > 5 - y$ $(-\infty, \frac{-49}{29}]$

$$-1.69$$

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

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

$$8 \leq 4b < 12$$

$$2 \leq b < 3$$

$$[2, 3)$$

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

$$x < -4 \qquad x > 4$$

$$(-\infty, -4) \cup (4, \infty)$$

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

$$2x + 4 > \frac{1}{2}x.$$

Name: __Key__

9/30/2016

Algebra II Quiz

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. $f(x) = 3.99x + 10$

b) How much do I get charged for renting 5 movies in one month? $~~$3.99~~$ 29.95

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

a)

$D: [-6, 3]$

$R: [-5, -1]$

Yes.
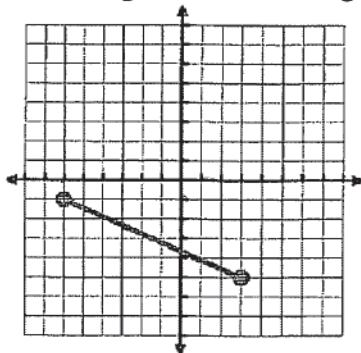
b)

$D: (-\infty, \infty)$

$R: [0, \infty)$

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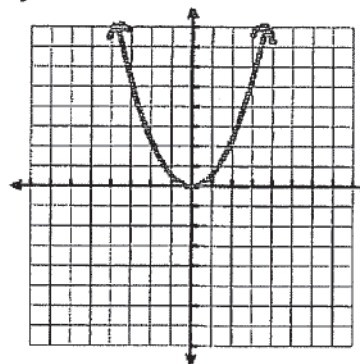
3) Identify the independent and dependent variables in the following scenarios.

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)

0   10

$|x - 5| \geq 5$

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

-1   4

$|x - \frac{3}{2}| > 2.5$

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

$4/3$ 4

$(-\infty, \frac{4}{3}] \cup [4, \infty)$

$|3x - 8| \geq 4$

$3x - 8 \geq 4$

$x \geq 4$

$-3x + 8 \geq 4$

$-3x \geq -4$

$x \leq \frac{4}{3}$

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

-8   4

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

$|2x + 4| < 12$

$(-8, 4)$

$2x + 4 < 12$

$2x < 8$

$x < 4$

$-2x - 4 < 12$

$-2x < 16$

$x > -8$

Name: Key
10/7/2016
Algebra II Quiz

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

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

$x \neq 2$

$(-\infty, 2) \cup (2, \infty)$

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

$x < -2$ ~~$(x+)$~~

-2

$[-2, \infty)$

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

a)

$D: [-6, 3]$

$R: [-6, -1]$

yes
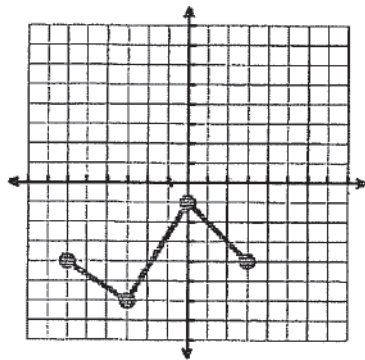
b)
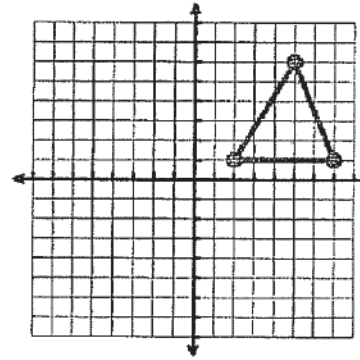
$D: [2, 7]$

$R: [1, 6]$

no.

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.

I: questions
D: wrong

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

I: students
D: seats.

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

a)

   -2   4

$|x - 1| < 3$

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

~~(o~~ ~~o)~~

-1   4
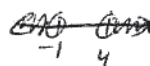
$|x - 1.5| > 2.5$

5) Solve the following inequalities, graph your answer, and write it in interval notation:
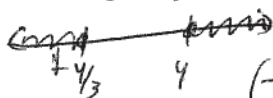
4/3   4

$|3x - 8| \geq 4$

$\left(-\infty, \frac{4}{3}\right] \cup [4, \infty)$

$3x - 8 \geq 4$

$x \geq 4$

$-3x + 8 \not\geq 4$

$x \leq \frac{+4}{3}$

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

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

+3 +3

$(-8, 4)$

$|2x + 4| < 12$ and

-8   4

$2x + 4 < 12$

$x < 4$

$-2x - 4 < 12$

$x > -8$

Name: Key
10/14/2016
Algebra II Quiz
1) Find the domain of each of the following functions.

a) $f(x) = \dfrac{5-x}{-50+10x} - \sqrt{3x+6}$ < 0 $\quad (-2,5)\cup(5,\infty)$ b) $f(x) = x^3 + 4$

$\underset{0}{11}$ $\qquad x < -2$ $\qquad\qquad\qquad\qquad\qquad (-\infty,\infty)$

$x \ne 5$ $\qquad\qquad$ ~~$\leftarrow x \longrightarrow x \rightarrow$~~
$-2 \quad 5$

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

$\qquad$ a) $\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ b)

D: $(-4,5)$

R: $[-2,5)$

$\quad$ yes.

$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\quad$ D: $[-6,3]$

$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\quad$ R: $[-5,-1]$
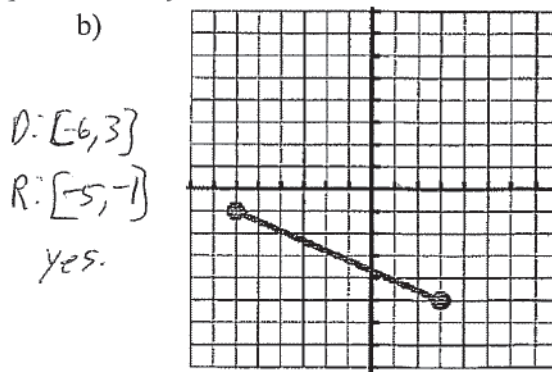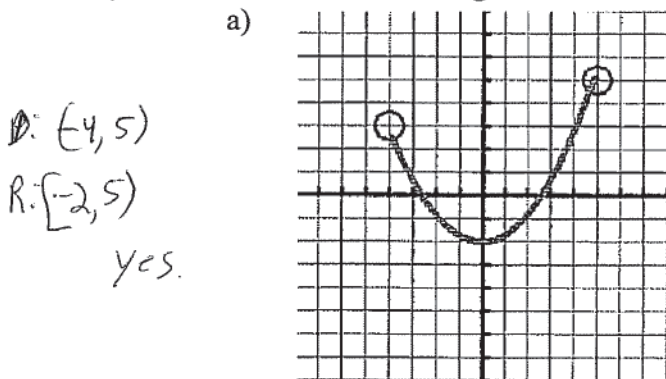
$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\quad$ yes.

3) a) With a power to a power, you __multiply__ the exponents. (ex. $(x^2)^3$)
b) When writing a number in scientific notation, there should be __1__ digit/s before the decimal.
c) When dividing with the same __base__, you keep the base and __subtract__ the __exponents.__
d) With domain, you always need to check for two things: __$(-)$__ under a __radical__ and
__zero__ in the __denominator__ of a fraction. Otherwise the domain is automatically: (__$-\infty$__ , __∞__)

4) Simplify the following expressions. Write your answers in scientific notation.
a) $.42 * 10^{11} * 37 * 10^{-10}$
$\qquad\qquad$ 15.54×10^1

$\qquad\qquad$ $\boxed{1.554 \times 10^2}$

$\qquad\qquad\qquad\qquad$ b) $\dfrac{(12345678*10^{-30})}{98765432*10^{-40}}$ $\quad .1250 \quad \times 10^{10}$

$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\quad \boxed{1.25 \times 10^9}$

5) Simplify the following expressions. Leave your answers in exponent form with positive exponents.
a) $\left(\dfrac{15x^9y^5}{20x^4y^9}\right)$ $\qquad \dfrac{3x^5}{4y^4}$
$\qquad\qquad\qquad\qquad\qquad\qquad$ b) $\dfrac{2^3x^9y^4 * 3^2x^5y^{-10}}{8 \qquad\quad 9}$

$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad \dfrac{72x^{14}}{y^6}$

6) Simplify the following expressions. Leave your answers in exponent form.
a) $(4x^3 * x^8)^4$

$\qquad\qquad$ 4^4x^{44}

$\qquad\qquad\qquad\qquad\qquad$ b) $\left(\dfrac{8^3}{8^9}\right)^6$ $\qquad \dfrac{1}{8^{36}}$

Name: _Key_

10/28/2016

Algebra II Quiz

1) Simplify the following radicals.

a) $\sqrt{32}$ $4\sqrt{2}$

b) $\sqrt[3]{81x^8y^3}$ $3x^2y \sqrt[3]{3x^2}$

2) Simplify the following radicals.

a) $\sqrt[4]{1250}$ $5\sqrt[4]{2}$

b) $\sqrt[3]{-80x^7}$ $-2x^2 \sqrt[3]{10x}$

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

b) When writing a number in scientific notation, there should be _1_ digit/s before the decimal.

c) When multiplying with the same _base_, you keep the base and _add_ the _exponents_.

d) In the radical $\sqrt[4]{}$, 4 is the _index_. We say it is a _4_ for _1_ deal.

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

a) $.42 * 10^{11} * 37 * 10^{-10}$ 1.554×10^2

b) $\dfrac{(12345678*10^{-30})}{98765432*10^{-40}}$ 1.25×10^9

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

a) $\dfrac{12x^9y^5}{24x^{-4}y^9}$ $\dfrac{1 x^{13}}{2 y^4}$

b) $2^3x^9y^4 * 3^2x^5y^{-10}$ $\dfrac{72x^{14}}{y^6}$

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

a) $(4x^3 * x^8)^4$ $4^4 x^{44}$

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

Name: **Key**

11/4/2016

Algebra II Quiz

1) Simplify and rationalize the following radicals.

a) $\sqrt{\dfrac{7}{16}}$ = $\dfrac{\sqrt{7}}{4}$

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

2) Simplify and rationalize the following radicals.

a) $\sqrt[3]{\dfrac{3}{2x}}$ $\dfrac{\cdot 2 \cdot 2 \cdot x \cdot x}{\cdot 2 \cdot 2 \cdot x \cdot x}$ $\dfrac{1}{2x}\sqrt[3]{12x^2}$

b) $\dfrac{7 \cdot \sqrt[3]{2 \cdot x \cdot x}}{\sqrt[3]{4x} \cdot 2 \cdot x \cdot x}$ = $\dfrac{7\sqrt[3]{2 \cdot x^3}}{2x}$

3) a) With radicals, we do not want a ___$\sqrt{\ }$___ in the ___$\frac{1}{\square}$___ , and we do not want a
___$\frac{1}{\square}$___ in the ___$\sqrt{\ }$___ .

b) In the radical $\sqrt[4]{\ }$, 4 is the __index__. We say it is a __4__ for __1__ deal.

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

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

1.968×10^{-5}

b) $\dfrac{(12345678*10^{-40})}{98765432*10^{-30}}$ $.125 \times 10^{-10}$

$\boxed{1.25 \times 10^{-11}}$

5) Simplify and rationalize the following radicals.

a) $\sqrt{\dfrac{12x^5}{7y}}$ $\dfrac{\cdot 7 \cdot y}{\cdot 7 \cdot y}$ = $\dfrac{2x^2}{7y}\sqrt{21xy}$

b) $\dfrac{\sqrt[3]{y^{10}} \cdot x}{\sqrt[3]{x^{11}} \cdot x}$ $\dfrac{y^3\sqrt[3]{y \cdot x \cdot xy}}{x^4}$

6) Simplify the following expressions.

a) $1\cancel{2}4^{\frac{1}{2}} + 243^{\frac{1}{5}}$

$\overset{4}{12}$ $\overset{1}{3}$ $=15$

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

$3^5 = \boxed{243}$

Name: Key
11/18/2016
Algebra II Quiz

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

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

b) $x^3 + 6^4 x$ Cubic binomial.

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

a) $7x^3 + x - 5x^6$ $-5x^6 + 7x^3 + x$ $\frac{LC}{-5}$

b) $5x^2 - x^5 + 8 - 3x^3 + 2x$ $-x^5 - 3x^3 + 5x^2 + 2x + 8$ $\frac{LC}{-1.}$

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

first, outer, inner, last.

4) Multiply the following expressions.

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

$-2x^2 + 6x$

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

$2x^5 + 10x^2$

5) Multiply the following expressions.

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

$3x^2 + 5x - 2$

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

$x^3 - 7x + 6$

6) Simplify each polynomial expression.

a) $4m^3 + 7m^4 - 2 + 2m^3 - 2m^2 + 6m^4$

$13m^4 + 6m^3 - 2m^2 - 2$

b) $(-x^2 + 9xy - 2y) + (+y + 2x^2 + 14xy)$

$-3x^2 - 5xy - y$

Name: __Key__
12/2/2016
Algebra II Quiz

1) In the experiment, each nut weighs 3.2g and each bolt weighs 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? __38.4 g__

b) If you put 10 bolts on the scale, how much will the scale read? __77g__

c) If you put 4 nuts and 9 bolts on the scale, how much would it read? __82.1 g__

d) In the experiment, we came up with an equation to represent the data: $y = -3.2x + 37.08$

   i) What did 3.2 represent? mass of 1 nut.

   ii) What did 37.08 represent? mass of 12 nuts (total)

   iii) Why is 3.2 negative? taking them off.
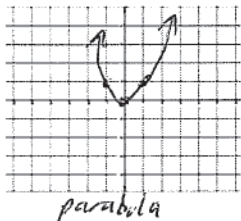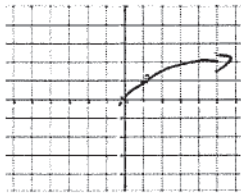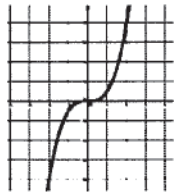
2) Classify the following polynomials by their degree and number of terms.

   a) $7x^3$ cubic   monomial

   b) $5x^2 - x^5 + 8 - 3x^3 + 2x$ quintic   polynomial with 5 terms.

3) Fill in the missing information.

Function Notation	Name	Graph
$f(x) = x^2$	quadratic	parabola
$f(x) = \sqrt{x}$	Square root	
$f(x) = x^3$	cubic	

4) Multiply the following expressions.

   a) $(x - 3)^2$ $x^2 - 6x + 9$

   b) $(x + 5)^2$ $x^2 + 10x + 25$

5) Multiply the following expressions.

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

   b) $(x - 4)(x + 4)$ $x^2 - 16.$