Howdy!!!!

Mr. Watson

Algebra

Algebra 1 Polynomials and Radicals Practice

Day 4 – Adding and Subtracting Polynomials **Name:** _____

Practice Assignment **Date:** _____ **Block:** _____

1. Classify the polynomials by degree and number of terms.

a. $4x^2 - 5x$ b. $x + 2$ c. 12 d. $5x^2 - 5x + 1$

e. $2x + 3x^2 - 4x$ f. $x^2 - 2x + 9 - x^2$ g. $4x^3 - 2x + 2x^2 - 2x + 5$

2. Add the following polynomials. Make sure your final answer is in standard form.

a. $(5x^2 - 4x + 7) + (8x^2 - 3x - 9)$ b. $(4x + 5x^2 + 8) + (-2x^2 + 8)$

3. Subtract the following polynomials. Make sure your final answer is in standard form.

a. $(2x - 4) - (5x + 7)$ b. $(3x^2 - 3x - 5) - (2x^2 + x - 6)$

c. $(4x^2 + 3x - 10) - (-4x^2 + 2x + 8)$ d. $(14x - 3x^2 + 2) - (3x + 4x^2 - 5)$

4. Determine the missing values of m and n.

a. $(4x^2 + 2x - 8) + (mx^2 - nx + 4) = 7x^2 - 5x - 4$

b. $(mx^2 - 8x + 3) - (6x^2 + nx - 4) = -2x^2 - 5x + 7$

$mx^2 - 8x + 3 - 6x^2 - nx + 4 = -2x^2 - 5x + 7$

$m - 6 = -2$

$m = 4$

$-8 - n = -5$

$+8 \qquad +8$

$\frac{-n}{-1} = \frac{3}{-1}$

$n = -3$

Radical and Polynomials Date_____ Period____

Simplify.

Odds Only

1) $-3\sqrt{320p^4}$

$-3\sqrt{64}\sqrt{5}\,pppp$

$-24p^2\sqrt{5}$

2) $-8\sqrt{30x^2}$

3) $4\sqrt{8}\cdot\sqrt{2}$

4) $-5\sqrt{10x^3}\cdot 5\sqrt{20x}$

5) $-4\sqrt{3}(\sqrt{12}+\sqrt{5})$

$4\sqrt{16}$

4

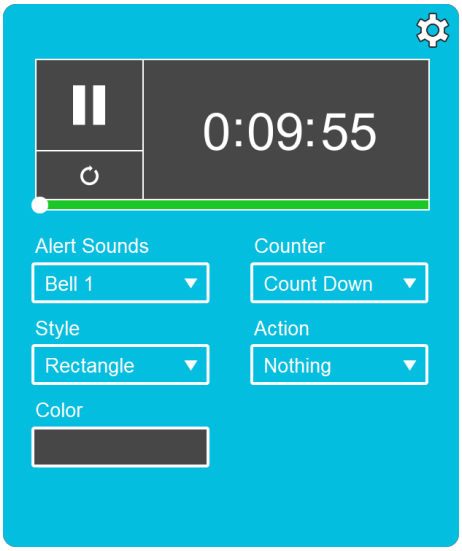
$\boxed{16}$

6) $2\sqrt{10}(2+\sqrt{5})$

7) $3\sqrt{3}+3\sqrt{27}$ $-4\sqrt{10}$ $-4\sqrt{25}$

$-4\sqrt{10}-20$

9) $3\sqrt{20}-\sqrt{45}$



Simplify each expression.

11) $(2a+3a^4-4a^3)+(3a^3-2a^2-2a^4)$

$1a^4-1a^3-2a^2+2a$

12) $(3x^4-4+4x)-(8x^2-x^4+1)$

13) $(5n^3+2+6n^4)-(6n^3-6n+2n^4)$

14) $(6k-4k^2+8)+(k-8k^2-8)$

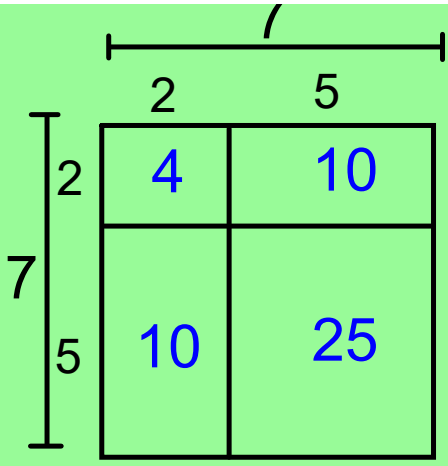
Lettuce take some notes!

a. Find the area of each box.

b. What is the sum of the boxes?

c. What is the area of the overall square?

d. What conclusion can you make about the sum of the parts of the square vs. the entire square?



Sum = 49

A = 7x7 =49

Draw a Square, find the area of each inner square to determine the area of the entire square:

$(6+2)^2$ $8^2=64$

	6	2
6	36	12
2	12	4

$36+12+12+4$

$\boxed{64}$

$(14+8)^2$

Draw a Square, find the area of each inner square to determine the area of the entire square:

$(6-2)^2 = 4^2 = 16$

	6	-2
6	36	-12
-2	-12	4

$36 - 12 - 12 + 4$

16

$(14-8)^2$

Draw a Square, find the area of each inner square to determine the area of the entire square:

$$(36-5)^2$$

Draw a Square, find the area of each inner square to determine the area of the entire square:

$(x+3)^2$

	x	3
x	x^2	$3x$
3	$3x$	9

$x^2+3x+3x+9$

x^2+6x+9

$(x-4)^2$

	x	-4
x	x^2	$-4x$
-4	$-4x$	16

$x^2-8x+16$

Draw a Square, find the area of each inner square to determine the area of the entire square: $(x+10)(x+10)$

$(x+10)^2$

	x	10
x	x^2	$10x$
10	$10x$	100

$x^2+20x+100$

$(x-13)^2$

	x	-13
x	x^2	$-13x$
-13	$-13x$	169

$x^2-26x+169$

What is the connection between the middle and last terms in each expression once simplified?

$$(x+8)^2$$

Draw a Square, find the area of each inner square to determine the area of the entire square:

$(x-2)(x+9)$

	x	9
x	x^2	$9x$
-2	$-2x$	-18

$x^2+7x-18$

$(x-2)(x+2)$

	x	2
x	x^2	$2x$
-2	$-2x$	-4

x^2-4

x^2+0x-4

Draw a Square, find the area of each inner square to determine the area of the entire square:

$(2x+1)(x-21)$

	x	-21
$2x$	$2x^2$	$-42x$
1	$1x$	-21

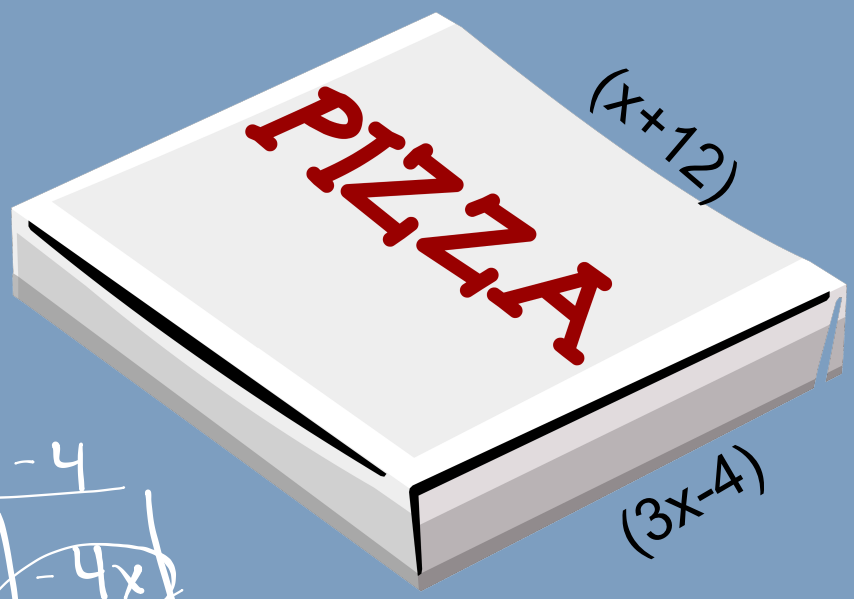
$2x^2-41x-21$

$(x+3)(4x^2-5x+7)$

	$4x^2$	$-5x$	7
x	$4x^3$	$-5x^2$	$7x$
3	$12x^2$	$-15x$	21

$4x^3+7x^2-8x+21$

Find the area of the following Pizza Box:



	$3x$	-4
x	$3x^2$	$-4x$
12	$36x$	-48

$3x^2 + 32x - 48$

Multiply the following:

$$4x(x^2 + 3x)$$

$4x^3 + 12x^2$

	x^2	$3x$
$4x$	$4x^3$	$12x^2$

$4x^3 + 12x$

What if we had the following?

$$(x+2)^3$$

$(x+2)(x+2)(x+2)$

	x	2
x	x^2	$2x$
2	$2x$	4

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

	x^2	$4x$	4
x	x^3	$4x^2$	$4x$
2	$2x^2$	$8x$	8

Answer: $x^3+6x^2+12x+8$

What if we had the following?

$$(x+2)(x-3)(x+4)$$

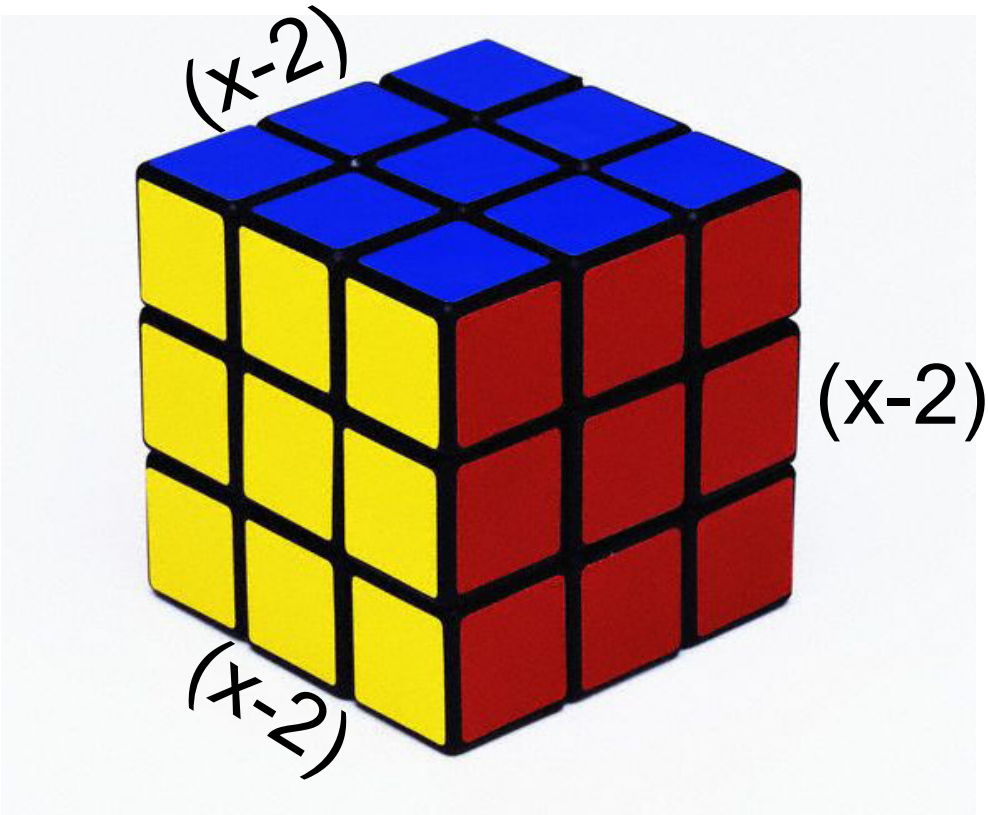
	x	-3
x	x^2	$-3x$
2	$2x$	-6

$x^2 - x - 6$

x	x^3	$-x^2$	$-6x$
4	$4x^2$	$-4x$	-24

$x^3 + 3x^2 - 10x - 24$

Find the volume of the Rubix Cube?



$V = l\ w\ h$

$= (x-2)(x-2)(x-2)$

$=$

	x	-2
x	x^2	$-2x$
-2	$-2x$	4

$x^2 - 4x + 4$

x	x^3	$-4x^2$	$4x$
-2	$-2x^2$	$8x$	-8

$x^3 - 6x^2 + 12x - 8$

HW

Algebra
Operations with Polynomials
Practice Assignment

Practice
Name: _____
Date: _____ **Block:** _____

Multiply the following polynomials.

1. $5x^3(4x^4-3x+1)$

2. $(x+4)(x-6)$

3. $(x+9)(x-9)$

4. $(3x+1)(2x-5)$

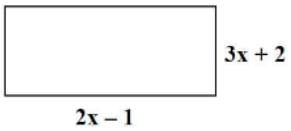
5. $(6x-3)(4x-1)$

6. $(2x+5)^2$

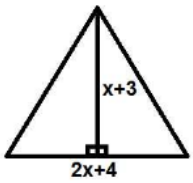
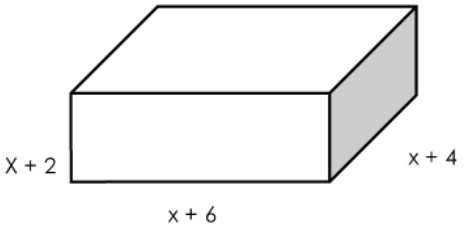
7. $(x+5)(x^2-7x+4)$

8. $(x-3)(x^2+8x+1)$

9. Write an expression for the perimeter and area of the following rectangle.



10. Write an expression for the area of the triangle. (A = ½ BH)



11. Find an expression for the volume of the pool below with the given dimensions.