Week: May 3 - 7

Problem Solving Assignments: **LiteratureAssignments:**

PUT THESE ASSIGNMENTS IN YOUR ASSIGNMENT NOTEBOOK!!!

Due: (Show work)

Tues. p. 538 WE 1-44, Voc. 11-8 **Tues. Mythology Test**
Algebra final review , Answer Key

Wed. p. 541 WE 1-38, Voc. 11-9 **Wed. Biography**
Algebra final review

Thurs. p. 545 WE 1-34, Voc. 11-10 **Thurs.**
Algebra final review, Test Ch. 11, Voc. Ch. 11

Fri. p. 548 W 1-30, p. 549 P 1-6 **Fri. Biography**
Algebra final review,
Voc. 12-1 and Fractional Exponents

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Mon. p. 553 WE 1-34, Voc 12-2 **Mon. Biography**
p. 563 WE 1- 39, Voc. 12-3 , Algebra final review

***One line of paper per line of work. Skip line between problems. Fold paper in half. Problems done in class on the left side, those remaining on the right side. Numerators on 1 line, denominators on 2nd line. Vocabulary check score in margin on right. Correct in red pen. Any problems not done are to be recorded during check. If you earn extra credit indicate the points at the top of your paper. Heading and title must be complete. Work done in pencil. Errors are erased, not crossed out.**

*** CS = Complete sentences, include question in answer, no pronouns without corresponding noun. Skip line between answers. Type all work not done in class. Use cursive for classwork. Use erasable pen. Follow writing standards. Scoring Marks: Gr = grammar error, P = use of pronoun without noun, M = meaning of voc. term is not clear, Sp = spelling error, NAS = not a sentence, Q in A = missing question in answer,**

Before passing in your paper put your first and last name on the back of the last page

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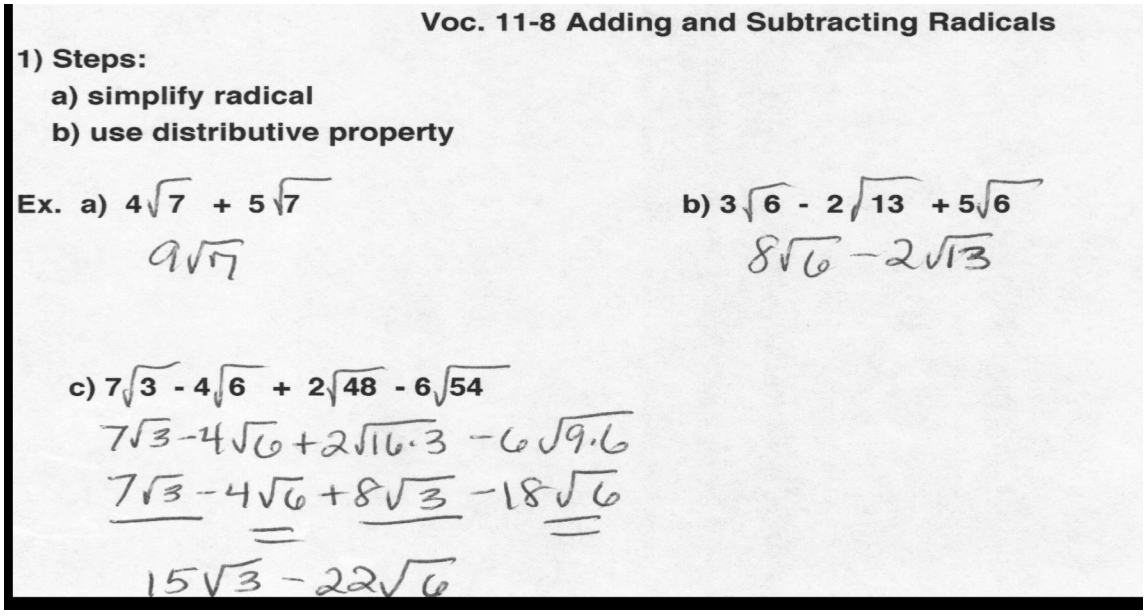

Voc. 11-9 Multiplication of Binomials with Radicals

Remember...

FOIL

Difference of squares

$a^2 - b^2$

Trinomial square

$a^2 + 2ab + b^2$

$a^2 - 2ab + b^2$

Ex. $(6 + \sqrt{11})(6 - \sqrt{11})$ $(3 + \sqrt{5})^2$ $(2\sqrt{3} - 5\sqrt{7})^2$

$36 + 6\sqrt{11} - 6\sqrt{11} - \sqrt{121}$

$36 - 11$

25

$(3+\sqrt{5})(3+\sqrt{5})$

$9 + 3\sqrt{5} + 3\sqrt{5} + \sqrt{25}$

$9 + 6\sqrt{5} + 5$

$14 + 6\sqrt{5}$

$(2\sqrt{3} - 5\sqrt{7})(12\sqrt{3} - 5\sqrt{7})$

$144\sqrt{9} - 60\sqrt{21} - 60\sqrt{21} + 25\sqrt{49}$

$432 - 120\sqrt{21} + 175$

$607 - 120\sqrt{21}$

Rationalizing denominator with a binomial:

Ex. $\frac{3}{5 - 2\sqrt{7}}$ **Use conjugate**

$(a\sqrt{b} + c\sqrt{d})(a\sqrt{b} - c\sqrt{d})$ **these are conjugates (difference of squares)**

$\frac{3}{5-2\sqrt{7}} \cdot \frac{(5+2\sqrt{7})}{(5+2\sqrt{7})} = \frac{15 + 6\sqrt{7}}{25 - 4\sqrt{49}} = \frac{15 + 6\sqrt{7}}{-3} = -5 - 2\sqrt{7}$

$25 - 4(7)$

$25 - 28$

Voc. 11-10 Simple Radical Equations

1) Radical equation - an equation with a variable in the radicand

Solution method:

a) isolate radical on 1 side

b)square both sides

Ex. $48 = \sqrt{2d}$

$48^2 = (\sqrt{2d})^2$

$\frac{2304}{2} = \frac{2d}{2}$

$1152 = d$

Ex. $\sqrt{5x + 1} + 2 = 6$

$-2 \quad -2$

$(\sqrt{5x+1})^2 = (4)^2$

$5x + 1 = 16$

$-1 \quad -1$

$\frac{5x}{5} = \frac{15}{5}$ → $x = 3$

Note:

When you square both sides, the new equation may not be equivalent to the original. You must check every possible root (answer) in the original equation to see if it works.

Voc. Fractional Exponents

1) For integers > 1

$a^{1/n} = \sqrt[n]{a}$

If a < 0 and n is even no real number answer is possible.

Ex. $a^{1/3}$ $\sqrt[3]{a}$ $\quad 27^{1/3}$ $\sqrt[3]{27} = 3$ $\quad 16^{1/4}$ $\sqrt[4]{16} = 2$ $\quad 32^{1/5}$ $\sqrt[5]{32} = 2$

Calculator key $\sqrt[x]{y}$

Ex. $32\ \sqrt[x]{y}\ 5$

Note: $-25^{1/2} = -\sqrt{-25}$ no real answer $\quad -27^{1/3} = \sqrt[3]{-27} = -3$

2) $a^{m/n} = (\sqrt[n]{a})^m$

Ex. $8^{2/3}$ $(\sqrt[3]{8})^2$ $2^2 = 4$ $\quad 16^{5/2}$ $(\sqrt{16})^5$ $4^5 = 256$

Voc. 12-1 Quadratic Equation with Perfect Squares

Steps:

1) isolate perfect square
2) Take square root of both sides

$\sqrt{x^2} = \sqrt{k}$

$x = \pm\sqrt{k}$

if k > 0 (2 answers - roots)
if k = 0 (1 answer - double root)
if k <0 (no answers - real roots)

ex. 1) $\sqrt{m^2} = \sqrt{49}$

$m = \pm 7$

2) $\frac{5r^2}{5} = \frac{45}{5}$

$\sqrt{r^2} = \sqrt{9}$

$r = \pm 3$

3) $\sqrt{(x+6)^2} = \sqrt{64}$

$x + 6 = \pm 8$

$x = 6 \pm 8$

$6 + 8 = 14$, $6 - 8 = -2$

4) $\frac{5(x-4)^2}{5} = \frac{40}{5}$

$\sqrt{(x-4)^2} = \sqrt{8}$

$x - 4 = \pm\sqrt{8}$

$x - 4 = \pm 2\sqrt{2}$

$x = 4 \pm 2\sqrt{2}$

5) $y^2 + 6y + 9 = 49$

$\sqrt{(y+3)^2} = \sqrt{49}$

$y + 3 = \pm 7$

$y = 3 \pm 7$

$= 10, -4$

6) $2(3x-5)^2 + 15 = 7$

$-15 \quad -15$

$\frac{2(3x-5)^2}{2} = \frac{-8}{2}$

$\sqrt{(3x-5)^2} = \sqrt{-4}$

No sol - no real roots

Voc. 12-2 Completing the Square

If quadratic equation is not a perfect trinomial square, we make it one.

Ex. $x^2 + 14x + \_\_\_$

Note: middle is twice the product of square roots of first and last terms.

****To complete the square take 1/2 of the middle term, square it, and put it in for last term above.**

Ex. $x^2 - 3x - 18 = 0$

$x^2 - 3x + \_\_ = 18 + \_\_$

$x^2 - 3x + \frac{9}{4} = 18 + \frac{9}{4}$

$(x - \frac{3}{2})^2 = \frac{72}{4} + \frac{9}{4}$

$\sqrt{(x - \frac{3}{2})^2} = \sqrt{\frac{81}{4}}$

$x - \frac{3}{2} = \pm \frac{9}{2}$

$x = \frac{3}{2} \pm \frac{9}{2}$

$\frac{3}{2} + \frac{9}{2} = \frac{12}{2} = 6$

$\frac{3}{2} - \frac{9}{2} = \frac{-6}{2} = -3$

6, -3

Voc. 12-3 Quadratic Formula

See p. 567 for how Formula was obtained.

Formula...

if $ax^2 + bx + c = 0$ **and** $a \neq 0$ **and** $b^2 - 4ac \geq 0$ **then...**

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Ex. $9x^2 + 12x - 1 = 0$

$x = \frac{-12 \pm \sqrt{144 - 4(9)(-1)}}{2 \cdot 9}$

$= \frac{-12 \pm \sqrt{144 + 36}}{18}$

$= \frac{-12 \pm \sqrt{180}}{18}$

$= \frac{-12 \pm 6\sqrt{5}}{18}$

$= \frac{-2 \pm \sqrt{5}}{3}$

Ex. $x^2 = -8$

$x^2 + 8 = 0$

$x = \frac{0 \pm \sqrt{0^2 - 4(1)(8)}}{2}$

$x = \frac{\pm \sqrt{-32}}{2}$

No real root solution.