Day 1
HW/Notes

ALGEBRA REVIEW #2

OBJECTIVES:

1) Review Algebra 1 topics including factoring, solving absolute value equations, and solving quadratics using the ZPP.

FACTORING

GCF/Binomial/Trinomial

1) $x^2 - 16$

$(x+4)(x-4)$

2) $x^2 + 7x + 12$

$(x+4)(x+3)$

3) $x^2 - x - 6$

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

4) $6x^2 - 7x - 3$

$6x^2 + 2x - 9x - 3$

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

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

5) $2x^2 - x - 15$ $\quad -30,\ -6,\ 5,\ -1$

$2x^2 - 6x + 5x - 15$

$2x(x-3) + 5(x-3)$

$(2x+5)(x-3)$

ABSOLUTE VALUE EQUATIONS

6) $|x-5| = 2$

$x - 5 = \pm 2$

$x = 3 \quad x = 7$

7) $3|2x+5| - 10 = 20$

$3|2x+5| = 30$

$|2x+5| = 10$

$2x + 5 = \pm 10$

$2x + 5 = 10 \quad 2x + 5 = -10$

$x = 5/2 \quad x = -15/2$

8) $-2|x-4| = 6$

$|x-4| = -3$

NO SOLUTION!

SOLVING QUADRATICS

Factoring, using the ZPP, square root method, and the quadratic formula (we won't use this yet)

9) $x^2 - 6x + 8 = 0$

$(x-4)(x-2) = 0$

$x = 4, 2$

10) $x^2 - 4x = 0$

$x(x-4) = 0$

$x = 0 \quad x = 4$

11) $x(x-3)(2x+5) = 0$

$x = 0 \quad x = 3 \quad x = -5/2$

12) $4x^2 = 36$

$x^2 = 9$

$x = \pm 3$

13) $(x-3)^2 - 3 = 13$

$(x-3)^2 = 16$

$x - 3 = \pm 4$

$x = 7, -1$

SOLVING RADICALS

14) $\sqrt{x} = 9$

$x = 81$

15) $\sqrt{x+3} = 4$

$x + 3 = 16$

$x = 13$

SIMPLIFYING RADICALS

Find the largest perfect square!

16) $\sqrt{48}$

$\sqrt{16}\sqrt{3}$

$4\sqrt{3}$

17) $10\sqrt{24}$

$10\sqrt{4}\sqrt{6}$

$10 \cdot 2\sqrt{6}$

$20\sqrt{6}$

18) $3\sqrt{28} + 2\sqrt{12} - 6\sqrt{7}$

$3\sqrt{4}\sqrt{7} + 2\sqrt{4}\sqrt{3} - 6\sqrt{7}$

$3 \cdot 2\sqrt{7} + 2 \cdot 2\sqrt{3} - 6\sqrt{7}$

$6\sqrt{7} + 4\sqrt{3} - 6\sqrt{7}$

$4\sqrt{3}$

SOLVING LITERAL EQUATIONS

1) Eliminate intended variable from the denominator.
2) Get all intended variables to one side
3) Factor out variable
4) Divide

19) Solve for x: $xy + c = x + y$

$xy - x = y - c$

$x(y-1) = y - c$

$x = \dfrac{y-c}{y-1}$

20) Solve for b: $a = \dfrac{b}{a+b}$

$a(a+b) = b$

$a^2 + ab = b$

$a^2 = b - ab$

$a^2 = b(1-a)$

$\dfrac{a^2}{1-a} = b$