

## Using Computers to Solve Math Problems WS #2

### 1. Polynomial Operations:

Add:

1.  $(10y^2 + 14y - 2) + (8y^2 - 11y + 6)$

Subtract:

2.  $2(x^2 + 5) - 3(2x + 6) - (5x^2 - 3x)$

Multiply:

3.  $(5x^2 + 14x + 12)(-7x^2 + 6x + 4)$  clarify

### 2. Factoring Polynomial Expressions:

4.  $x^2 - 10x + 16$

5.  $x^2 - 16$

6.  $x^3 + 64$

### 3. Rational Expressions

7. Combine  $\frac{2}{x+3} + \frac{3}{x^2+7x+12} + \frac{1}{x+4}$

8. Combine  $\frac{5}{3t} - \frac{4}{t^2}$

9. Perform the indicated operations:  $\frac{2+y}{y-4} \cdot \frac{y^2-16}{8+y^3}$

### 4. Roots and Radicals

10. Multiply  $(\sqrt{x} + 2)(\sqrt{x} - 2)$

11. Multiply  $(\sqrt{x} + 2y)^3$

12. Combine:  $\sqrt{112x^5y^9} - 2xy^4\sqrt{28x^3y}$

13. Solve the equation:  $\sqrt{x} = \frac{2}{5}$

### 5. Solving Polynomials/Quadratic Equations

Solve by factoring and applying the zero property:

14.  $x^2 - 2x - 8 = 0$

15.  $x^2 - 10x + 25 = 0$

Solve by graphing, and mark solutions on graph:

16.  $x^2 - 20x + 100 = 0$

17.  $x^2 + 8x - 48 = 0$

### 6. Linear Systems

Solve:

18.  $-2x - 4y = -10$

$-2x + 5y = 8$

19.  $-4x - 3y = 59$

$3x + 6y = -78$

Graph and mark solutions:

20.  $y = -x + 6$

$-5x = -10 - 5y$

### Tips for Success

1. Double check your input before calculating.
2. Add parentheses to make clear the order of operations.
3. Make sure the number of open parentheses equals the number of closed parentheses.
4. Put parentheses around expressions separated by a horizontal division bar.
5. When plotting a graph remember to set the window parameters to the best values to see the graph.
6. When you need help consult the HELP files.