Algebra 2—H HW #____ Name_____
Handout 5.2B

Do all work on your own paper.

Copy down each problem. Factor completely, if possible. If the polynomial cannot be factored, write "prime". Give answers in simplest form.

1. $12x^3 - 35x^2 - 3x$
2. $x^4 + 5x^2 - 84$
3. $15x^2 + 23x + 6$
4. $49 - 100x^2$
5. $3x^2 - 243$
6. $4x^4 - 9x^2$
7. $2x^4 - 32$
8. $x^{2n} - y^{2n}$
9. $(x-3)^2 - 4y^2$
10. $x^3 + 24x^2 + 144$
11. $16x^2 - 24xy + 9y^2$
12. $81x^2 + 198x + 121$
13. $x^{2n} - 6x^n + 9$
14. $2x^4 - 16x^2 - 18$
15. $16 - (x^2 - 2x + 1)$

Copy down each problem. Solve for *x*.

16. $16x^2 - 20x = -6$
17. $49x^2 + 70x + 25 = 0$
18. $5x^3 - 125x = 0$
19. $(x+6)^2 = 3(x+12) - x^2$
20. $(2x+1)^2 - 7(2x+1) + 10 = 0$

Copy down each problem. Find the zeros.

21. $y = x^2 + 2x - 35$
22. $y = 3x^2 - 7x - 6$

Draw a figure. Write one or more equations and solve the problem.

23. The base of a triangle is 1 cm shorter than three times the height. The area of the triangle is 22 cm^2. Find the height of the triangle.

24. A garden with area 800 square feet is completely enclosed with 120 feet of fencing. Find the dimensions of the garden.

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25. Graph the parabola $y = -2(x+5)(x-2)$. Find the x-intercepts, axis of symmetry, vertex and the maximum/minimum value of the function.