Algebra 2 Unit 4 Review

SHOW ALL WORK on the worksheet

1. Find $f(2)$ for $f(x) = -8x + 13 + 3x^3 - 2x^4$

Perform the indicated operation

2. $(3s^3 + s) + (4s^3 - 2s^2 + 7s + 10)$

3. $(4t^3 - 11t^2 + 4t) - (-7t^2 - 5t + 8)$

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

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

6. $(7x^3 + 11x^2 + 7x + 5) \div (x^2 + 1)$

7. $(x^3 - 4x + 6) \div (x + 3)$

Factor completely

8. $3y^5 - 48y^3$

9. $27m^3 + 1$

10. $3x^4 - x^2 - 24$

11. $-4b^4 - 500b$

12. $z^5 - 3z^4 - 16z + 48$

13. $18c^4 + 57c^3 - 10c^2$

Solve each equation

14. $4z^5 = 84z^3$

15. $4x^5 - 40x^3 = -36x$

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16. List the possible zeros of $f(x) = 3x^4 + 5x^3 - 3x + 42$

Find all zeros of each function

17. $f(x) = 2x^3 + 5x^2 - 11x - 14$

18. $g(x) = x^4 + 15x^2 - 16$

Write an equation of a polynomial of least degree with the given zeros

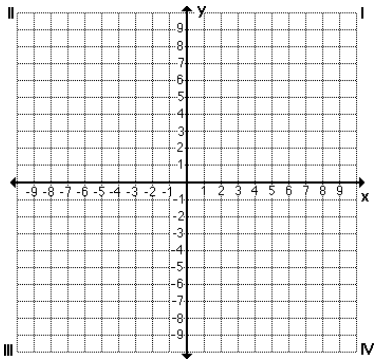
19. -2, 1, 3

20. $-5, -1, 2$

21. $2, -i$

Graph each function. State the end behavior, domain, range, intercepts, and coordinates of all local max and local min.

22. $y = x^4 - 5x^2 + 4$



23. $f(x) = 2x^3 + 2x^2 - 8x - 8$