Algebra 2H HW #_____ Section 3-6X and Review

Do all problems on your own paper. Be sure to show only the work leading to the solution (no scratch work.)

1. Find all zeros of $f(x) = 3x^5 + 4x^4 - 2x^3 + 2x^2 - 5x - 2$ and graph the function.

Find the zeros and write each function in factored form with <u>linear</u> factors that do not contain fractions.

2. $f(x) = 16x^4 - 25$ 3. $f(x) = x^3 - 2x^2 - 10x + 20$ 4. $f(x) = 3x^5 + 6x^3 + 3x$

Write the simplest polynomial function with the given roots.

5. 1, 4, -3 6. $\frac{1}{2}$, 5, -2 7. $-2i$, $\sqrt{3}$, 4

Selected answers: 1. 1, -2, $\frac{-1}{3}$, $\pm i$ 2. $\pm\frac{5}{2}$, $\pm\frac{5}{2}i$ 3. 2, $\pm\sqrt{10}$ 4. 0, $\pm i$

5. $f(x) = x^3 - 2x^2 - 11x + 12$ 6. $f(x) = 2x^3 - 7x^2 - 17x + 10$

7. $f(x) = x^5 - 4x^4 + x^3 - 4x^2 - 12x + 48$

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