

POLYNOMIALS - HOMEWORK

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1. Using integral factors, find the complete factorization of $9x^5 - 21x^4 - 2x^3 + 20x^2 - 8x$ if a multiple root is $\frac{2}{3}$.
2. Find the remaining zeros of $x^4 + 2x^3 - 5x^2 - 10x$ if one zero is -2 .
3. Find a formula for $f(x)$ in factored form if the zeros of $f(x)$ are $\{0, \pm 2i, \pm \sqrt{3}, \frac{1}{2}\}$. Express your answer with integral coefficients.
4. Find the value of k if $4x^4 - 3x^2 + kx - 1$ divided by $x + 3$ gives a remainder of -4 .
5. Use synthetic division to express $\frac{2x^3 - x^2 + 4x - 5}{2x - 1}$ as a mixed fraction. Check your result.