

3.4 WS

Find all the zeros of the polynomial function and write the polynomial as a product of its leading coefficient and its linear factors.

1. $P(x) = x^4 + x^3 - 2x^2 + 4x - 24$

2. $P(x) = x^3 - 3x^2 + 7x - 5$

3. $P(x) = 2x^4 - x^3 - 4x^2 + 10x - 4$

4. $P(x) = x^5 - 9x^4 + 34x^3 - 58x^2 + 45x - 13$

Use the given zero to find the remaining zeros of each polynomial function.

5. $P(x) = x^4 - 6x^3 + 71x^2 - 146x + 530$; $2 + 7i$

6. $P(x) = 2x^3 - 5x^2 + 6x - 2$; $1 + i$

Find the polynomial function P , with real coefficients, that has the indicated zeros and satisfies the given conditions.

7. Zeros: $2 - 5i$, -4 ; degree 3

8. Zeros: $4 + 3i$, $5 - i$; degree 4

9. Zeros: 3 , $2i$; degree 3

10. Zeros: $\frac{1}{2}$, $4 + i$; degree 3