
Give complete legible solutions to the following problems be sure to provide all the necessary steps to support your answers.

1. List all possible rational zeros of the given polynomial: $P(x) = 6x^3 - 12x^2 + 4x + 12$ Ans _____

2. Use Descartes' rule of signs to determine the number of positive zeros and possible number of negative zeros.
 $P(x) = 6x^3 - 12x^2 + 4x + 12$ Ans _____

3. Find all zeros of the polynomial
 $p(x) = (x - 3)(x^3 + 1)$ Ans _____

4. Find all rational zeros of the function
 $h(t) = t^3 + 8t^2 + 13t + 6$ Ans _____

5. Use the zero or root function in a calculator to approximate the zeros of the function Ans _____
 $p(w) = w^5 - 7w^4 + 10w^3 + 14w^2 - 24w$

6. Use the given zeros to find the remaining zeros of the function Ans _____
 $f(x) = 2x^4 - x^3 + 49x^2 - 25x - 25, \quad x = 5i$

7. Find all zeros of the function and write the polynomial as a product of linear factors Ans _____
 $f(x) = x^4 + 6x^3 + 10x^2 + 6x + 9$