

## Practice Quiz 2

1. Find all the zeros of the polynomial  $p=x^6 + 2x^5 + x^4 + x^3 + 2x^2 + 2x + 1$
2. Include a graph of  $y=p(x)$  which clearly exhibits the x-intercepts.
3. Factor p completely into linear factors.
4. Let f be the rational function 
$$\frac{x^3 - 4x^2 + 5x - 2}{x^4 - 5x^2 + 4}$$
  - a. What is the y-intercept of the graph of f?
  - b. What are the x-intercepts of the graph of f?
  - c. What are the vertical asymptotes of the graph of f?
  - d. What is the horizontal asymptote of the graph of f?
5. Explain why f has only 2 vertical asymptotes even though the denominator of f has 4 zeros.
6. Compute  $\lim_{x \rightarrow r} f$  for r equal to each zero of the denominator of f.
7. List all the values of x for which f is NOT DEFINED.
8. Include a graph of f which clearly shows all the relevant behavior of f.