

Assignment 3 (10/3)

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Note: The marks for Quiz 1 are up on Chalk. It will NOT be counted towards your final grade!

Problem 1

Problems 1.5.(45 – 48).

Problem 2

Let $P(x) = x^2(x+1)^3(x-1)^2(x-3)^5$. Sketch the graph of $P(x)$.

Problem 3

Let $f_n(x) = x^n$, $n = 1, 2, 3, \dots$ be functions from \mathbb{R} to \mathbb{R} .

- (a) Sketch the graphs of f_n for $n = 2, 4, 6$ in one figure and $n = 1, 3, 5$ in another figure.
- (b) Based on your results from part (a), make a general sketch of f_n for every even and odd n .
- (c) Given a positive integer k , compare the graphs of f_k and f_{k+1} on $[0, \infty)$.