

# PreCalc 12 Final Review Chp 2

Note Title

2016-05-27

2.1) Focus is mostly on  $\sqrt{\quad}$  &  $\sqrt[3]{\quad}$   
 Invariant points are where  $f(x)$  meet  $y=0$  or  $y=1$   
 (or  $y=-1$  for  $\sqrt[3]{\quad}$ )

Graph  $\sqrt{\quad}$  above  $f(x)$  when  $0 < f(x) < 1$   
 Graph  $\sqrt{\quad}$  below  $f(x)$  when  $f(x) > 1$   
 Flip above/below for  $\sqrt[3]{\quad}$  when  $f(x) < 0$

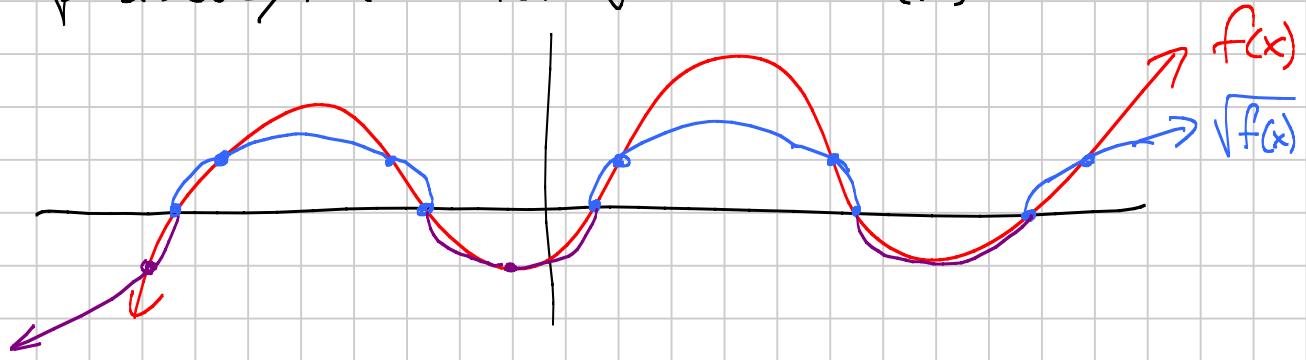


Table of values is not always accurate because it can miss key points.

2.2) Rational Expressions:  $\frac{P(x)}{Q(x)}$   
 Polynomials: exponents  $\in \mathbb{N}_0$  ← natural numbers including 0.  
 coeff  $\in \mathbb{R}$   
 Terms: hole, VA, HA, SA (OA)

2.3) Zeros of  $Q(x)$  are holes or VA's  
 factors cancel from  $P(x)$  &  $Q(x)$   
 factors of  $Q(x)$  don't cancel.

$$\frac{P(x)}{Q(x)} = \frac{(x-3)(x+2)(x-4)}{(x-3)(x+1)(x+2)}$$

↑
↑
↑  
 hole VA hole.

HA: Only when  $\deg(Q) \geq \deg(P)$   
 If  $\deg(Q) = \deg(P)$  then HA:  $y \neq 0$  divide leading coeffs.  
 "  $>$  " then HA:  $y = 0$

SA: Only when  $\deg(P) = \deg(Q) + 1$  and there is at least one VA. If only holes, then not SA, it's a line. SA is found with division.

2.4) Other option is to graph  $P(x)$  &  $Q(x)$  then do key points (like Chp 4). But it's harder.