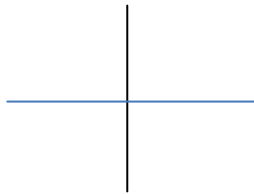


Quartic Functions: $y = ax^4 + bx^3 + cx^2 + dx + e$

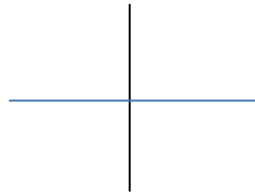
If $a > 0$	If $a < 0$
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Possible Roots

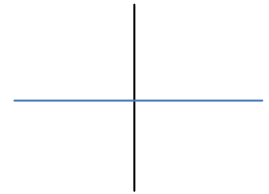
Four Distinct Real Roots



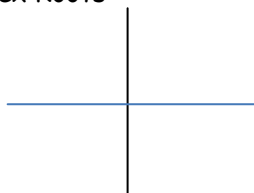
Two Equal Real Roots and Two Distinct Real Roots



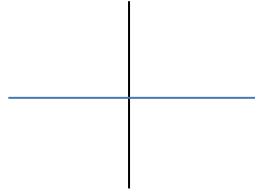
Two Pairs of Equal Real Roots



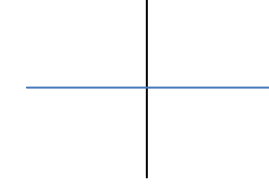
Two Equal Real Roots and Two Complex Roots



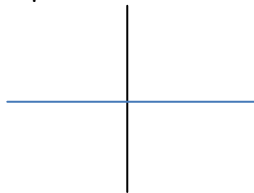
Four Equal Real Roots



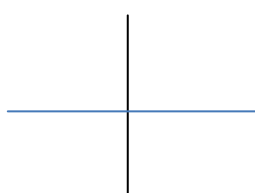
Four Distinct Complex Roots



One Distinct Real Root and Three Equal Real Roots



Two Equal Pairs of Complex Roots



Two Distinct Real Roots and Two Complex Roots

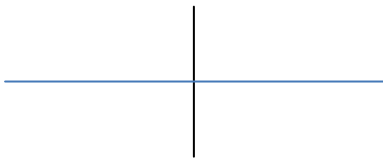


Quintic Functions: $y = ax^5 + bx^4 + cx^3 + dx^2 + ex + f$

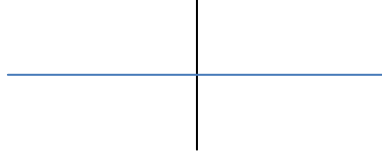
If $a > 0$	If $a < 0$

Possible Roots

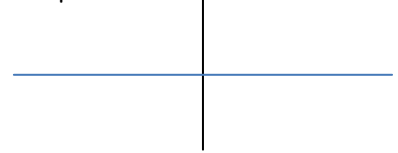
Five Distinct Real Roots



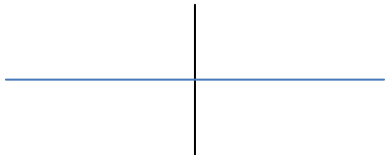
Two Pairs of Equal Real Roots and One Distinct Real Root



Three Distinct Real Roots and Two Complex Roots



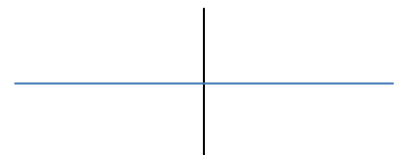
Two Equal Real Roots, Two Complex Roots and 1 Distinct Real Root



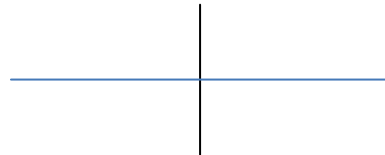
Four Complex Roots and One Distinct Real Root



Two Equal Real Roots and Three Distinct Real Roots



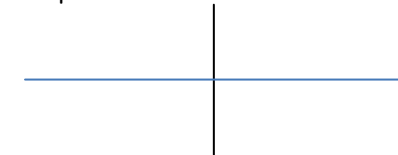
Four Equal Real Roots and One Distinct Real Root



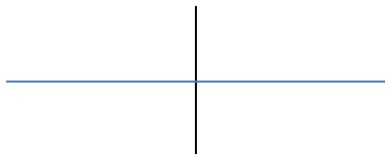
Five Equal Real Roots



Three Equal Real Roots and Two Complex Roots



Three Equal Real Roots and Two Equal Real Roots



Three Equal Real Roots and Two Distinct Real Roots



One Distinct Real Root and Two Equal Pairs of Complex Roots

