**Summary 2: Functions**

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| **Vertical Line Test:** if every vertical line intersects graph at most once, the graph represents a function  **Piecewise Defined Functions:** Most functions are defined in a single expression, but more complicated functions are defined in multiple cases.  **Function Catalog**: We know the basic shape of the following functions:  *(1) linear*: graph is straight line  *(2) power*: graph is like a parabola (even) or a third degree power (odd)  *(3) polynomial*: graph is wavy with finitely many mins and max  *(4) rational:* graph usually has horizontal and/or vertical asymptotes  *(5) trig:* graph is periodic, i.e. it repeats  *(6) exp, logarithm:* either grows or shrinks super-fast |  |