Graph Behavior Key Words

Analyzing Functions Lesson

constant function – a function for which $f(x_1) = f(x_2)$ for each x_1 and x_2

decreasing function – a function for which $f(x_1) > f(x_2)$ when $x_1 < x_2$ for each x_1 and x_2.

increasing function – a function for which $f(x_1) < f(x_2)$ when $x_1 < x_2$ for each x_1 and x_2.

Even and Odd Functions Lesson

even function – a function whose graph displays symmetry with respect to the y-axis; for all x in the domain of f, $f(-x) = f(x)$

odd function – a function whose graph displays symmetry with respect to the origin; for all x in the domain of f, $f(-x) = -f(x)$

Asymptotes and End Behavior Lesson

asymptote – a line that the graph of a function approaches but does not intersect

end behavior – how a function behaves as x approaches infinity and negative infinity

infinity – an unbounded quantity that is greater than every real number, represented by the symbol ∞

Continuous and Discontinuous Functions Lesson

infinite discontinuity – discontinuity that occurs at a vertical asymptote of a function as the function approaches infinity or negative infinity from each side of the asymptote; also called asymptotic discontinuity

jump discontinuity – discontinuity that occurs when the value of the function jumps from one value to the another

point of discontinuity – the point where a function is discontinuous

removable discontinuity – discontinuity at a point on the graph where the function is undefined or where the function value does not fit with the rest of the graph; also called a point discontinuity

Linear, Absolute Value, and Reciprocal Functions Lesson

constant function – the function $f(x) = c$, a special case of the linear function

family of functions – a group of functions whose equations have a similar form and whose graphs have the same basic shape

parent absolute value function – the function $f(x) = |x|$

parent linear function – the function $f(x) = x$, also called the identity function

parent function – the simplest version of a function in a family of functions

parent reciprocal function – the function $f(x) = \dfrac{1}{x}$

Power, Root, Exponential, and Logarithmic Functions Lesson

exponential function – a function of the form $f(x) = b^x$, where x is any real number and b is greater than zero but not equal to one

logarithmic function – a function of the form $f(x) = \log_b x$, where x is greater than zero and b is greater than zero but not equal to one

power function – a function of the form $f(x) = x^n$, where n is a whole number greater than zero

root function – a function of the form $f(x) = \sqrt[n]{x}$, where n is a positive real number

Transformations of Functions Lesson

horizontal shift – a change made to the graph of a function by sliding the graph left or right

transformation – a change made to the graph of a function by horizontal or vertical shifts, reflections, stretches, or compressions

vertical shift – a change made to the graph of a function by sliding the graph up or down