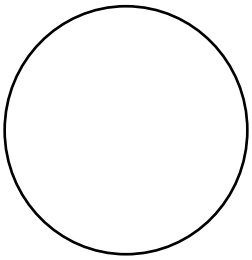
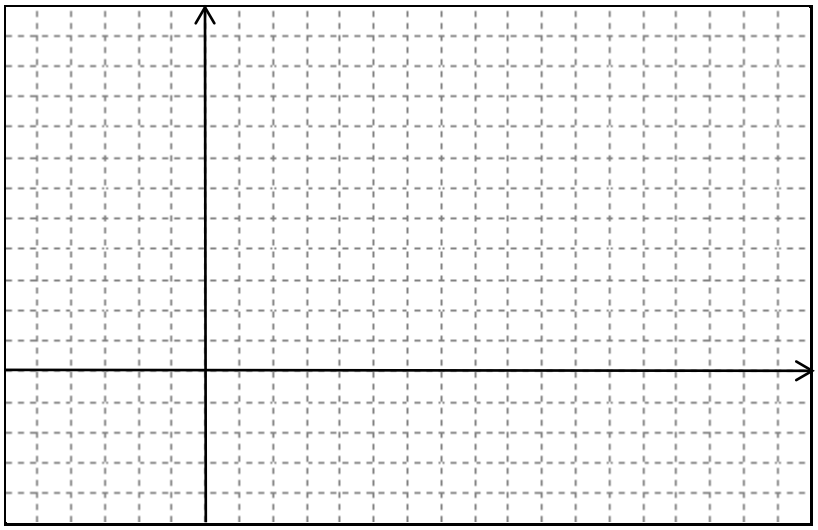
Class Discussion: More Graphing Sinusoidal Functions

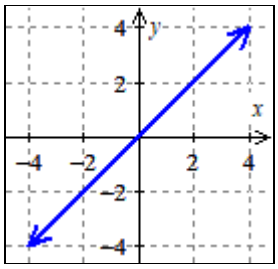
EXAMPLE: Suppose that a Ferris wheel with a diameter of 30 feet is elevated 5 feet above the ground and rotates at a constant rate of $0.5\frac{\text{rad}}{\text{min}}$. If passengers board the wheel at the "3 o'clock position," find an algebraic rule for a function h that represents the height of a passenger t minutes after boarding the wheel.



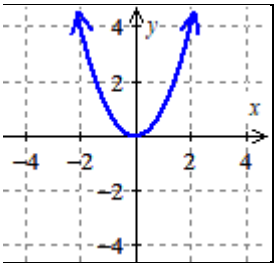


SOME IMPORTANT FUNCTIONS

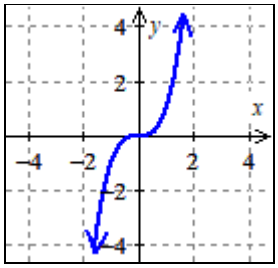
a. $f(x) = x$



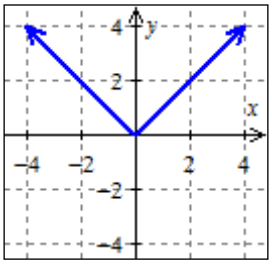
b. $f(x) = x^2$



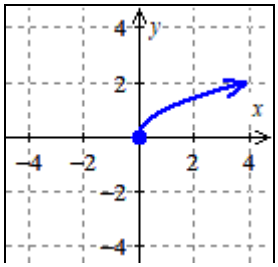
c. $f(x) = x^3$



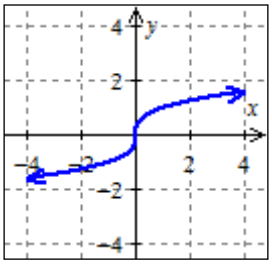
d. $f(x) = |x|$



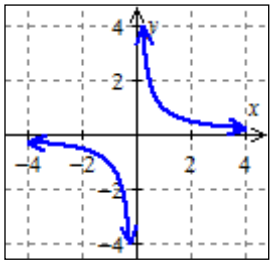
e. $f(x) = \sqrt{x}$



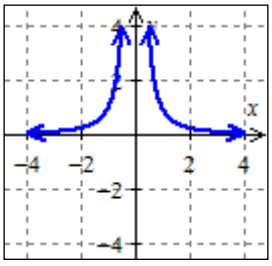
f. $f(x) = \sqrt[3]{x}$



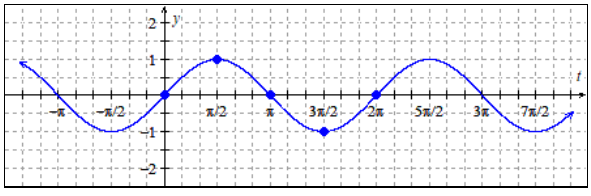
g. $f(x) = \dfrac{1}{x}$



h. $f(x) = \dfrac{1}{x^2}$



i. $f(x) = \sin(x)$



j. $f(x) = \cos(x)$