Exponent Function

General equations:
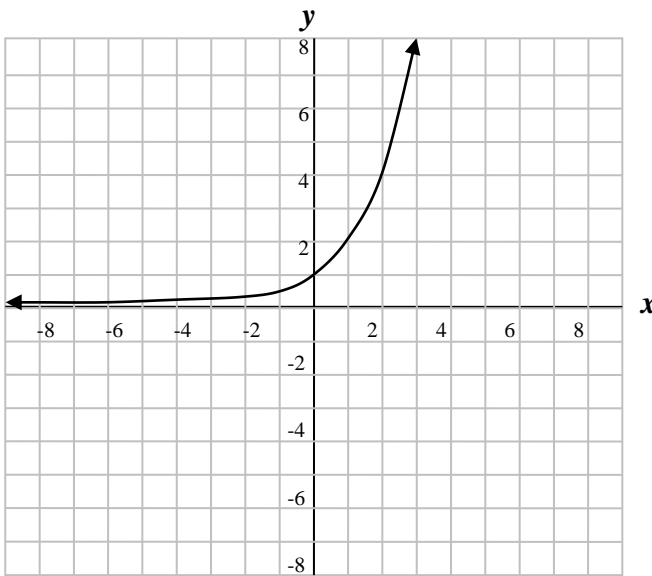
$$y = ab^x = a(1 + r)^x$$ where a = initial value, b = base, r = rate

$$y = ae^{rx}$$ where a = initial value, e = base = 2.718…, r = rate

Compound interest: $A(t) = P\left(1 + \dfrac{r}{n}\right)^{nt}$ **Continuous compounding:**

$$A = Pe^{rt}$$
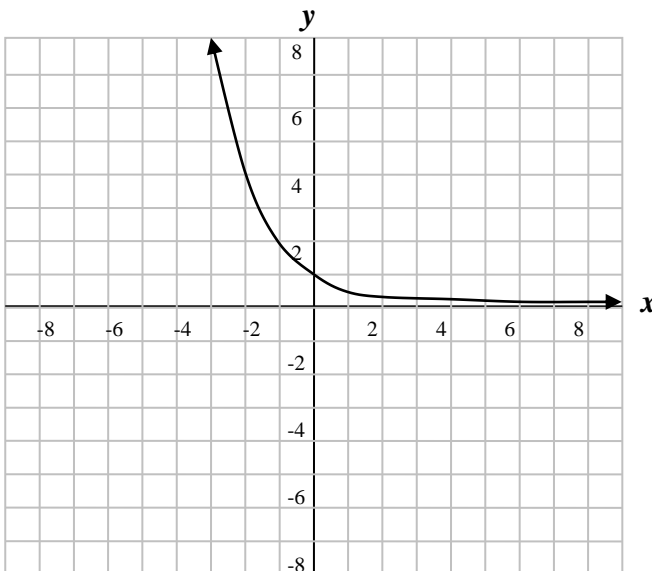
where where A(t) = the accumulated amount at time t, P = initial value (principal), r = annual rate, n = number of times compounded per year, and t = number of years

Growth function

Example:

$$y = 2^x$$

Decay function

Example:

$$y = 2^{-x} = \left(\frac{1}{2}\right)^x$$