

Power that is a number other than 0

**Power Function**

-  $f(x) = kx^a$  where  $k$  and  $a$  are non-zero constants

**Monomial Function**

constant  $f(x) = k$

-  $f(x) = kx^a$  where  $k$  is a constant and  $a$  is a positive integer

Integer

$\dots -3, -2, -1, 0, 1, 2, 3, 4, 5, \dots$

Determine whether the function is a power function, given that  $c, g, k,$  and  $\pi$  represent constants. For those that are power functions, state the power and constant of variation.

a)  $f(x) = \frac{-1}{3}x^4$

Power Function: yes  
 pwr = 4 ← degree  
 constant =  $-\frac{1}{3}$  ← LC

monomial: yes

c)  $f(x) = \frac{k}{x^3} = kx^{-3}$

power fct: yes  
 pwr = -3  
 constant = k  
 monomial: NO

d)  $f(x) = 5(3)^x \rightarrow$  Exponential Fct

power function: no b/c power is a variable

monomial: no

b)  $f(x) = 5x^{4/3}$

Power Function: yes  
 Pwr:  $4/3$   
 constant: 5

monomial: no b/c pwr is a fraction

d)  $f(x) = 6 = 6x^0 = 6(1)$

power function: NO  
 monomial: yes  
 degree = 0  
 Leading coefficient = 6

→ one term

For the functions above, determine which are monomial functions. For the functions that are monomials, give the degree and leading coefficient.