Algebra log 2

$\log_2(x-1) = 3$ $\Rightarrow$ x-1 = 2^3

x=9

$\log_2(x-5) = 2$ $\Rightarrow$ x-5 = 2^2

x=9

$\log_{\frac{1}{2}}(x-2) = 3$ $\Rightarrow$ x-2 =$(\frac{1}{2})^3 = \frac{1}{8}$

x= 2. $\frac{1}{8}$

$\log_{\frac{1}{2}}(x-4) = -2$ $\Rightarrow$ x-4 =$(\frac{1}{2})^{-2} = 4$

x= 8

$\log_3(x-1) = 0$ $\Rightarrow$ x-1 = 3^0

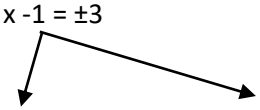
x - 1 =1

x=2

$\log_{(x-1)} 9 = 2$

$(x-1)^2 = 9$

$x-1 = \pm 3$



x -1=3

x = 3+1 = 4

x -1= -3

x = -3+1= - 2

Impossible by definition