Question: Is this function linear, Quadratic or Exponential? Tue 30 APR 2019

x	y	Δ_1	Δ_2	Ratios
−2	0.3	0.3	0.3	$\frac{0.6}{0.3} = 2$
−1	0.6	0.6	0.6	$\frac{1.2}{0.6} = 2$
0	1.2	1.2	1.2	$\frac{2.4}{1.2} = 2$
1	2.4	2.4	Not quadratic	$\frac{4.8}{2.4} = 2$
2	4.8	Not LINEAR		
3	9.6			
4	19.2			

Hence, it is EXPONENTIAL

Example: Let's assume the the global population grows 1.5% every year

Year	Population (Billions)
1970	5
1971	$5 \cdot 1.015 = 5.075$
1972	$5.075 \cdot 1.015 = 5.151125$
1973	$5.151125 \cdot 1.015$
1974	

EXPONENTIAL GROWTH

$$13\% \text{ of } 3 = 3 \cdot \frac{13}{100} = 0.39$$

$$3 + 3\frac{13}{100} = 3\left(1 + \frac{13}{100}\right)$$

$$= 3(1 + 0.13)$$

$$= 3 \cdot 1.13$$

Exercise 1) Determine y-intercept

2) Sketch func

3) State the domain & range

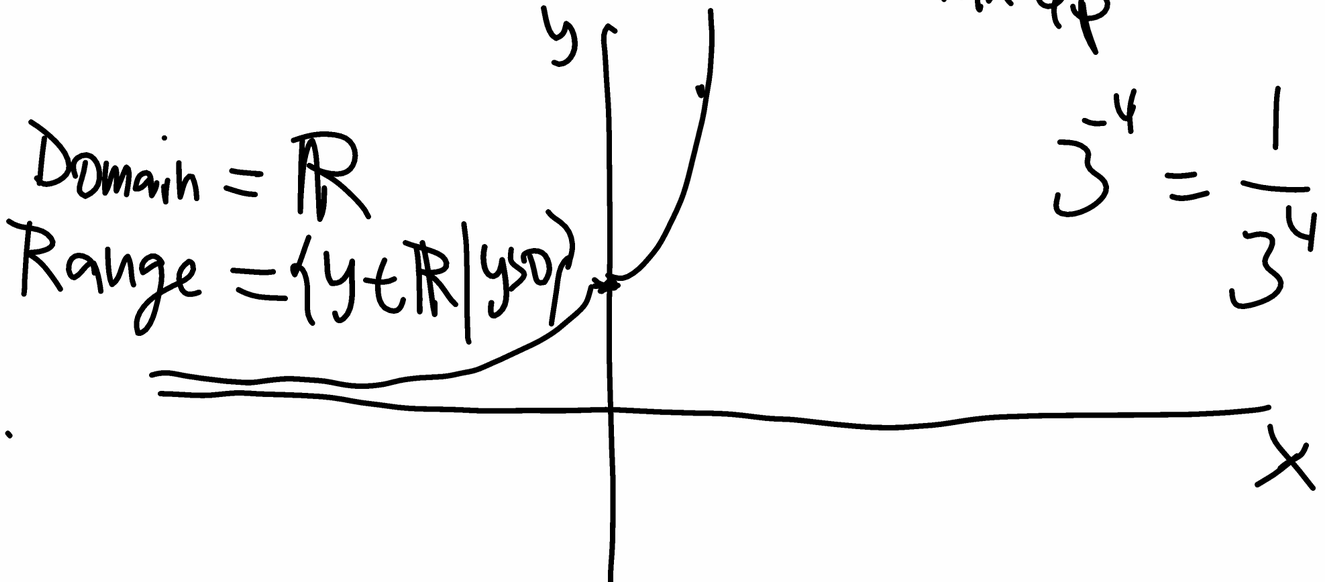
4) State the equation of the horizontal asymptote

$y = 0$

a) $y = 3^x$

$y_{intercept} = 3^0 = 1$

$3^{-4} = \frac{1}{3^4}$



Domain = $\mathbb{R}$

Range = $\{y \in \mathbb{R} \mid y > 0\}$

$f(x)$

$y_{intercept} = f(0)$