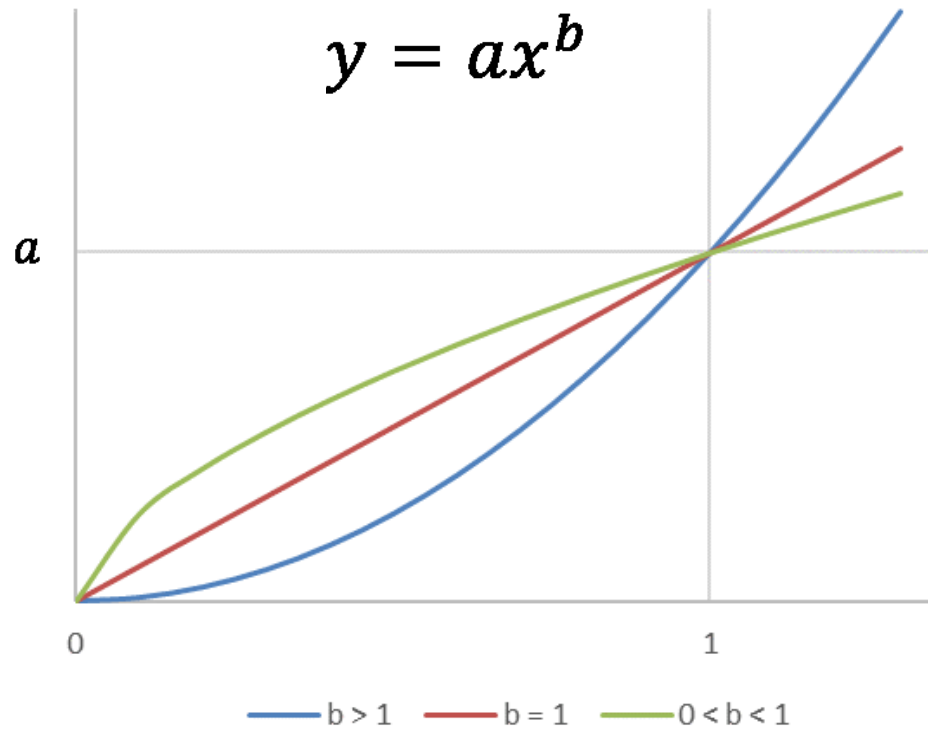


# Funções Linearizáveis



$$y = ax^b$$

$$\ln(y) = \ln(ax^b)$$

$$\ln(y) = \ln(a) + \ln(x^b)$$

$$\ln(y) = \ln(a) + b\ln(x)$$

$$y' = a' + bx'$$

$$y = ax^b$$

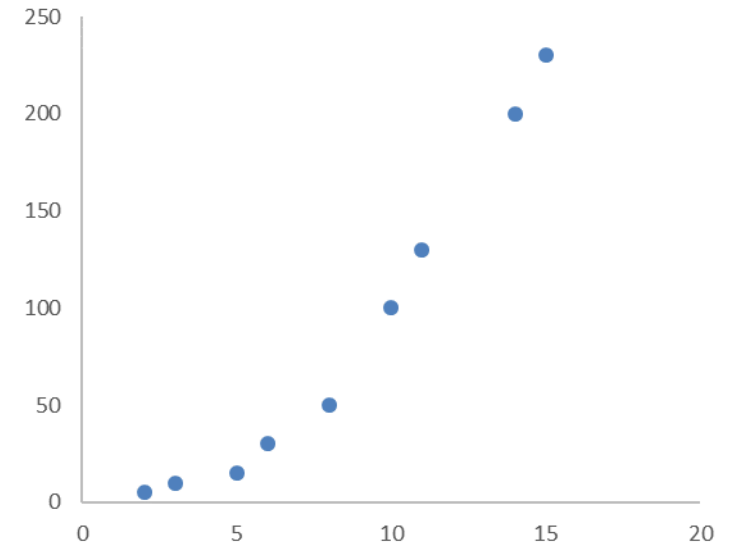
$$\ln(y) = \ln(ax^b)$$

$$\ln(y) = \ln(a) + \ln(x^b)$$

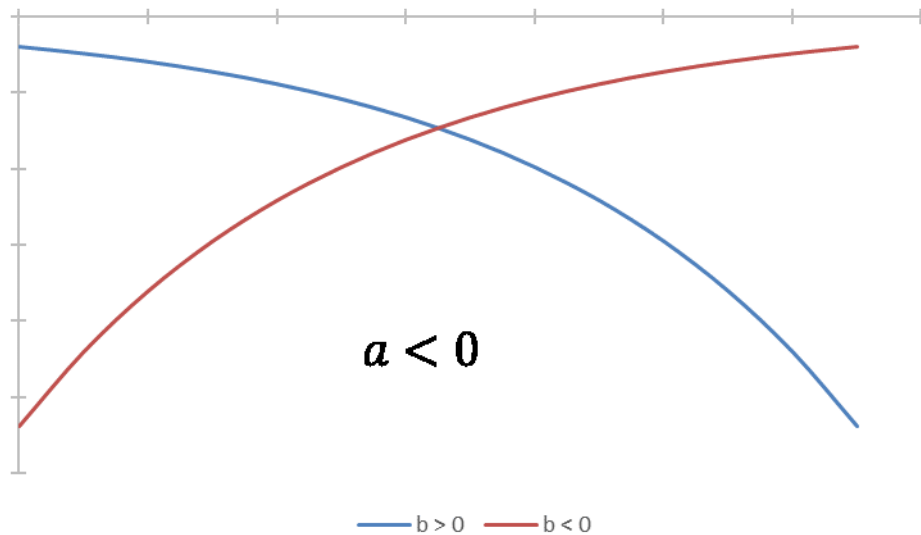
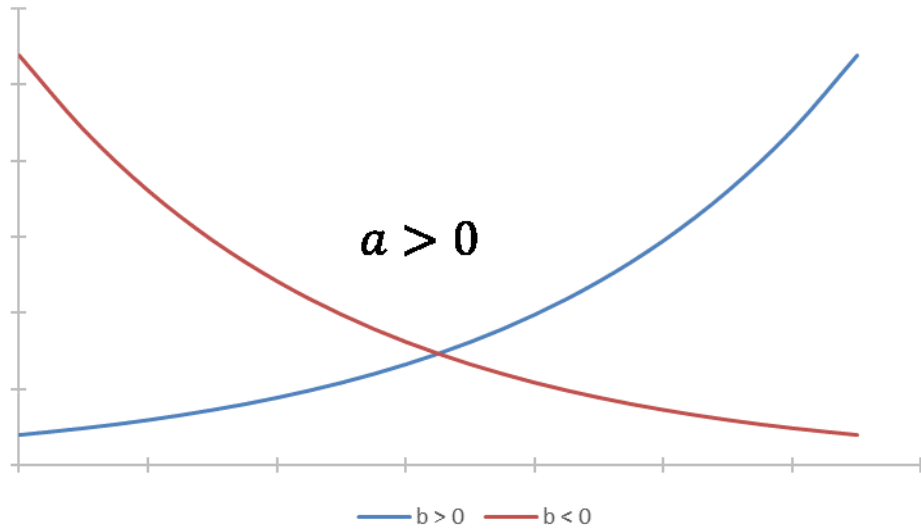
$$\ln(y) = \ln(a) + b\ln(x)$$

$$y' = a' + bx'$$

X	y
2	5
3	10
5	15
6	30
8	50
10	100
11	130
14	200
15	230



$$y = ax^b$$



$$y = ax^b$$

$$\ln(y) = \ln(ax^b)$$

$$\ln(y) = \ln(a) + \ln(x^b)$$

$$\ln(y) = \ln(a) + b\ln(x)$$

$$y' = a' + bx'$$

$$y = ae^{bx}$$

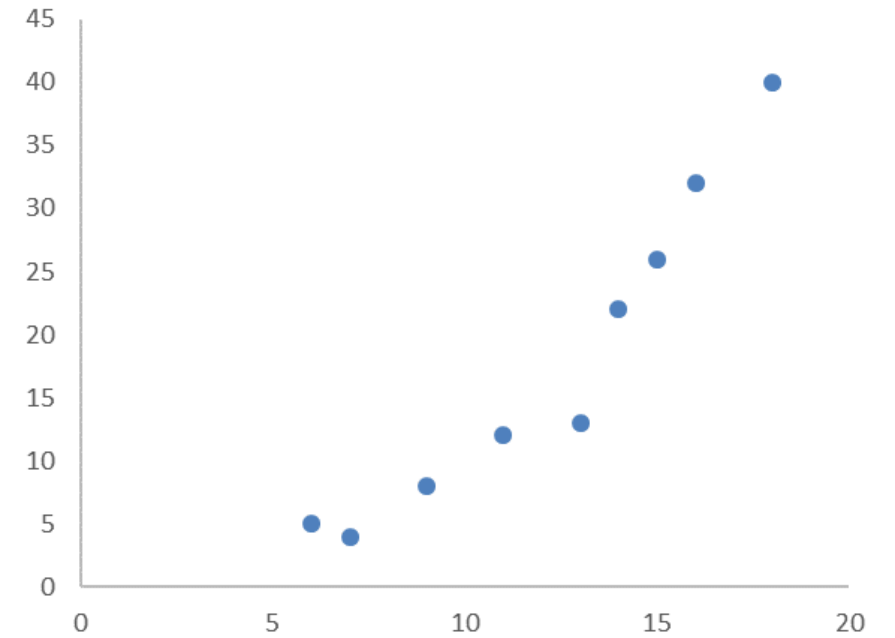
$$\ln(y) = \ln(ae^{bx})$$

$$\ln(y) = \ln(a) + \ln(e^{bx})$$

$$\ln(y) = \ln(a) + bx$$

$$y' = a' + bx$$

X	y
6	5
7	4
9	8
11	12
13	13
14	22
15	26
16	32
18	40



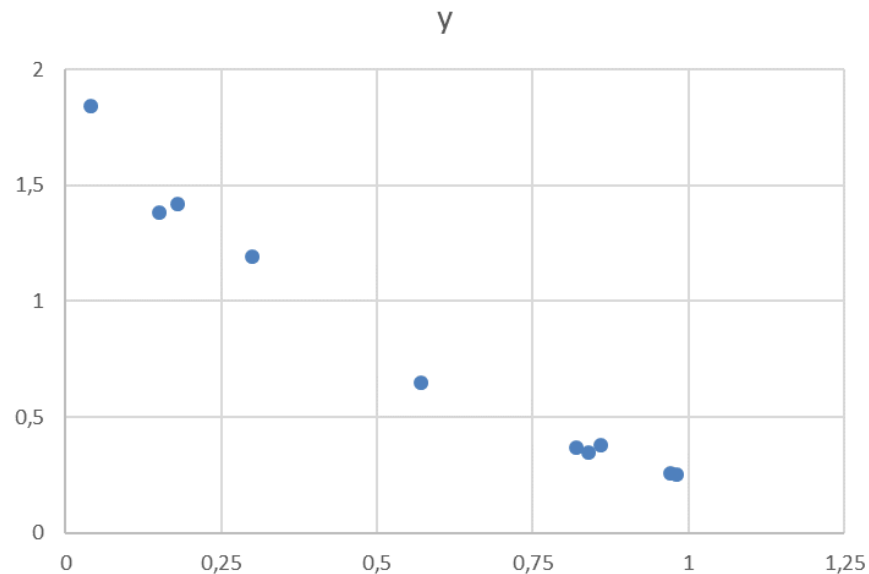
# Exercício

x	y
0,04	1,84
0,57	0,65
0,98	0,25
0,18	1,42
0,84	0,35
0,86	0,38
0,97	0,26
0,82	0,37
0,3	1,19
0,15	1,38

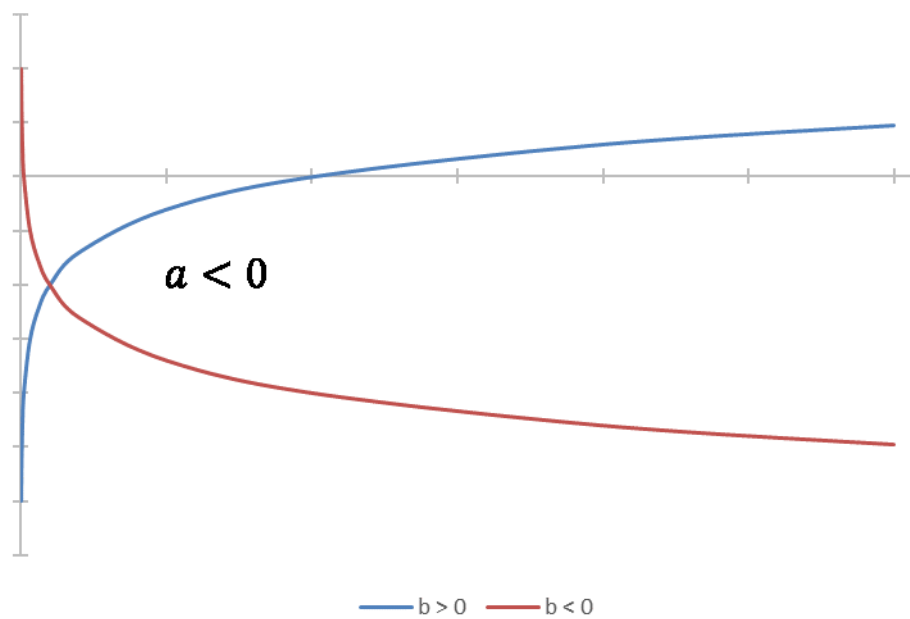
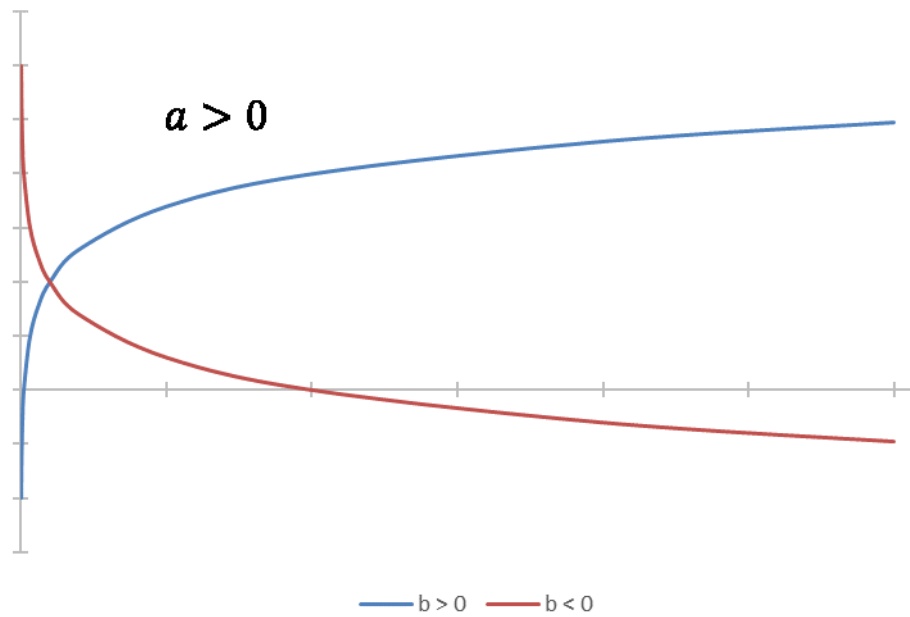
Encontre a reta de regressão e avalie se o seu ajuste.

Use a função  $f(x) = ae^{bx}$  em uma nova regressão

Compare os ajustes obtidos



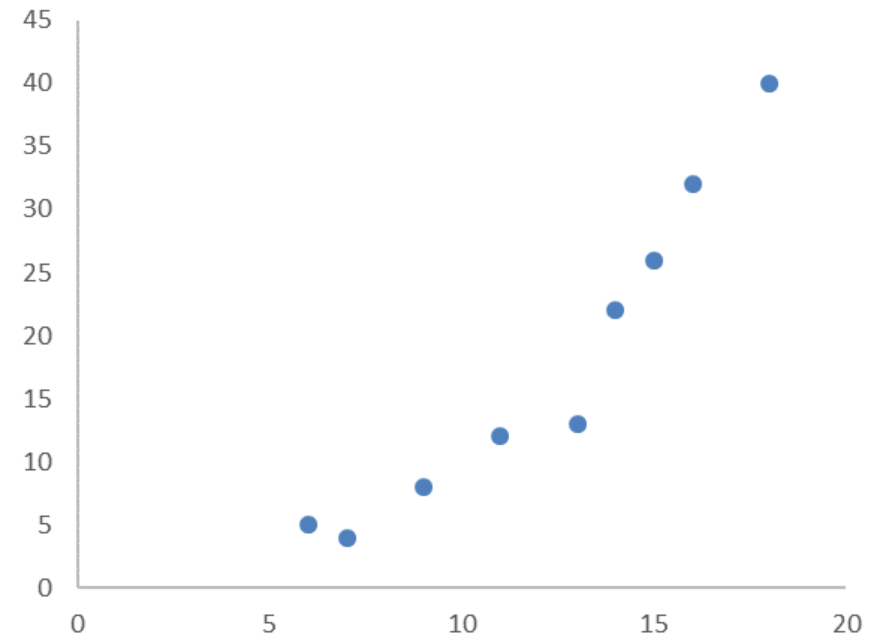
$$y = a + b \times \log(x)$$



$$y = a + b \times \log(x)$$

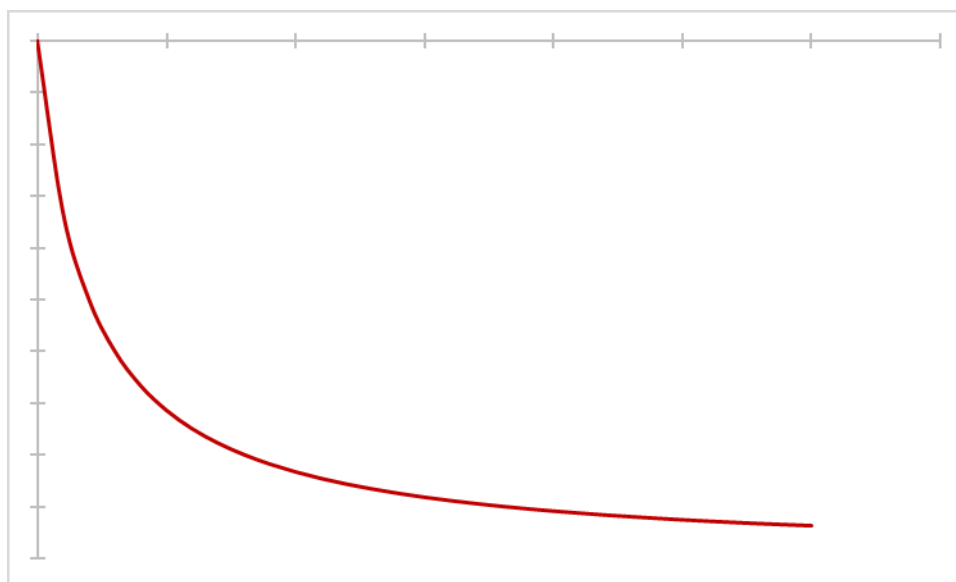
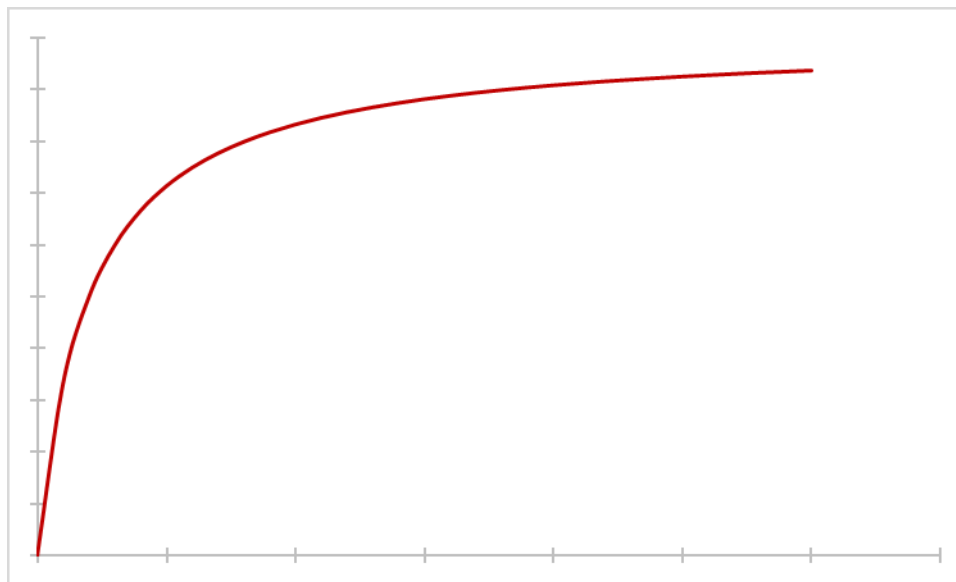
$$y = a + bx'$$

X	y
6	5
7	4
9	8
11	12
13	13
14	22
15	26
16	32
18	40





$$y = \frac{x}{ax - b}$$



$$y = \frac{x}{ax - b}$$

$$y(ax - b) = x$$

$$y \left( a - \frac{b}{x} \right) = 1$$

$$y \left( a - \frac{b}{x} \right) = \frac{1}{y}$$

$$\frac{1}{y} = a - \frac{b}{x}$$

$$y' = a - bx'$$

X	y
0	0,15
0,09	0,51
0,12	0,61
0,18	1,01
0,32	1,21
0,39	1,27
0,41	1,42
0,48	1,29
0,51	1,55
0,59	1,55
0,63	1,45
0,68	1,62

