

CM300 - Introdução ao Cálculo
Lista de Exercícios 7

1. Faça o gráfico das seguintes funções:

(a) $f(x) = 3^x$ (b) $f(x) = (1/3)^x$ (c) $f(x) = \log_3 x$ (d) $f(x) = \log_{1/3} x$

2. Sem o uso de calculadora, encontre o valor dos logaritmos abaixo.

(a) $\log_2 \frac{1}{4}$ (b) $\log_{\frac{1}{4}} 2$ (c) $\log_{16} 2$ (d) $\log_8 32$ (e) $\log_8 \frac{1}{4}$

(f) $\log_5 \frac{1}{125}$ (g) $\log_{125} \frac{1}{5}$ (h) $\log_{\frac{1}{9}} \frac{1}{3}$

3. Utilizando uma calculadora, encontre o valor aproximado dos logaritmos abaixo com 3 casas decimais.

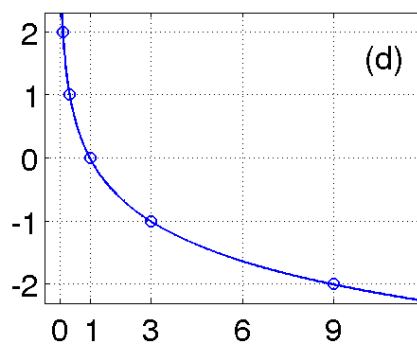
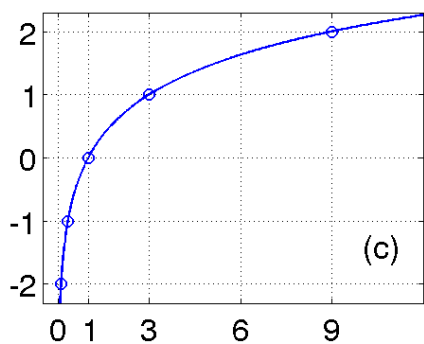
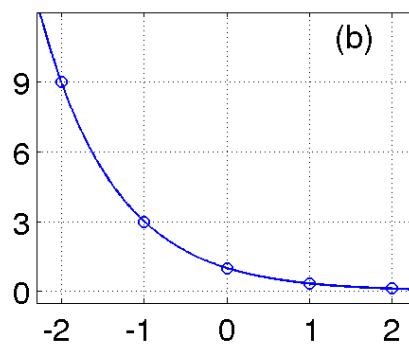
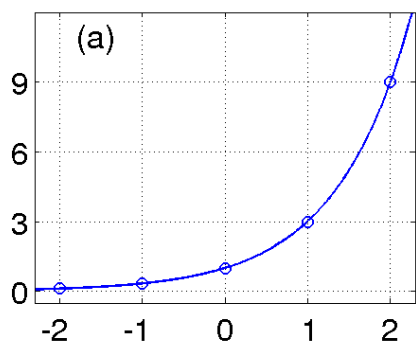
(a) $\log_3 5$ (b) $\log_3 \frac{1}{5}$ (c) $\log_{\frac{1}{3}} 5$ (d) $\log_5 3$

4. Encontre as soluções das equações abaixo.

(a) $2^x = 16$ (b) $2^{2x+1} = 16$ (c) $2 \cdot 3^{x+5} = 5$ (d) $5^{2x+1} = 2^x$ (e) $4^{3x-2} = 2^{3x}$

Respostas:

1.



2. (a) -2 (b) $-\frac{1}{2}$ (c) $\frac{1}{4}$ (d) $\frac{5}{3}$ (e) $-\frac{2}{3}$ (f) -3 (g) $-\frac{1}{3}$ (h) $\frac{1}{2}$

3. (a) $1,465$ (b) $-1,465$ (c) $-1,465$ (d) $0,683$

4. (a) $x = 4$ (b) $x = \frac{3}{2}$ (c) $x = \log_3 \left(\frac{5}{2} \right) - 5$ (d) $x = \frac{1}{\log_5 2 - 2}$ (e) $x = \frac{4}{3}$