

REVISÃO PARA A PROVA 1

1. Seja $f(x) = \sqrt{\frac{x+6}{7-x}}$.

- (a) Determine o domínio desta função.
- (b) Calcule $f(-6)$, $f(0)$ e $f(6)$.

2. $f(x)$ é a função definida por $f(x) = -6x + 2$.

- (a) Determine a raiz e os coeficientes linear e angular.
- (b) Diga se a função é crescente ou decrescente.
- (c) Os pontos $P(2, -10)$ e $Q(-1, 5)$ são pontos do gráfico de $f(x)$?

3. Sejam $f(x) = 3x^2 + 1$ e $g(x) = 2x + 3$.

- (a) Verifique se as funções são pares ou ímpares.
- (b) Determine $f(x) \times g(x)$, $(f \circ g)(x)$, $(g \circ f)(x)$, $(f \circ f)(x)$ e $(g \circ g)(x)$.
- (c) Determine $(f \circ g)(0)$, $(g \circ f)(-1)$, $(f \circ f)(1)$ e $(g \circ g)(2)$.

4. Qual a fórmula da função exponencial cujo gráfico passa por $(0, 10)$ e $(3, 640)$?

5. Calcule:

(a) $\log_5 125 + \log_7 1 - \log_{10} 1000$

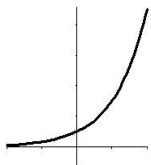
(b) $\log_{16} \frac{5}{2} + \log_{16} \frac{32}{5}$

(c) $\log_7 5 - \log_7 35$

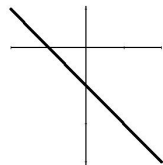
6. Para quais valores de x existe $\log_{(x+4)}(x-9)$?

7. Associe as funções a um possível gráfico:

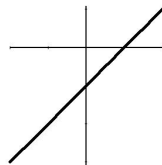
$$f(x) = 2x - 1 \quad g(x) = 2 \quad h(x) = -x - 1 \quad u(x) = 2x + 3 \quad v(x) = 5^x \quad w(x) = \left(\frac{1}{4}\right)^x$$



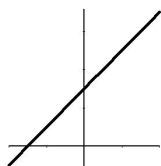
(A)



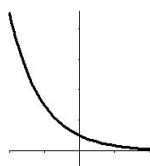
(B)



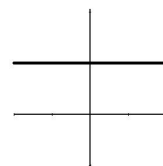
(C)



(D)



(E)



(F)

RESPOSTAS

1. .

(a) $D(f) = \{x \in \mathbb{R} \mid x < 7\}$

(b) $f(-6) = 0$ $f(0) = \sqrt{\frac{6}{7}}$ $f(6) = \sqrt{12} = 2\sqrt{3}$

2. .

(a) Raiz = 2 coeficiente angular = -6 coeficiente linear = 2

(b) Decrescente

(c) Sim / Não

3. .

(a) $f(x)$ é par

(b) $f(x) \times g(x) = 6x^3 + 9x^2 + 2x + 3$ $(f \circ g)(x) = 12x^2 + 36x + 28$ $(g \circ f)(x) = 6x^2 + 5$
 $(f \circ f)(x) = 27x^4 + 18x^2 + 4$ $(g \circ g)(x) = 4x + 9$

(c) $(f \circ g)(0) = 28$ $(g \circ f)(-1) = 11$ $(f \circ f)(1) = 49$ $(g \circ g)(2) = 17$

4. $f(x) = 10 \times 4^x$

5. .

(a) 0

(b) 1

(c) -1

6. $x > 9$

7. $f(x) \leftrightarrow C$ $g(x) \leftrightarrow F$ $h(x) \leftrightarrow B$ $u(x) \leftrightarrow D$ $v(x) \leftrightarrow A$ $w(x) \leftrightarrow E$