

Gabarito

Lista 1

1) (a) {3,5,7,9,11,12}

(b) {7}

(c) {3}

(d) {3,5,7,11}

(e) {5,7}

(f) {3,5,7,9,12}

2) (a) \emptyset ; {1} ; {{2,3}} ; {1,{2,3}}

(b) \emptyset ; {R} ; {O} ; {M} ; {A} ; {R,O} ; {R,M}

; {R,A} ; {O,M} ; {O,A} ; {M,A} ; {R,O,M} ;

{R,O,A} ; {O,M,A} ; {R,M,A} ; {R,O,M,A}

3) (a) Verdadeira

(b) Verdadeira

(c) Verdadeira

(d) Verdadeira

4) **(a)** \in

(b) A

(c) E

(d) A

(e) ϕ

(f) E

(g) ϕ

(h) A

(i) A^c

(j) A

(k) A

(l) ϕ

5) (a) $P(A) = \{ \emptyset ; \{0\} ; \{1\} ; \{2\} ; \{0,1\} ;$
 $\{1,2\} ; \{0,2\} ; \{0,1,2\} \}$

(b) $P(B) = \{ \emptyset ; \{y\} ; \{e\} ; \{s\} ; \{y,e\} ; \{y,s\}$
 $; \{e,s\} ; \{y,e,s\} \}$

6) (a) $A^2 = \{ (1,1) ; (1,2) ; (1,5) ; (1,7) ;$
 $(1,8) ; (2,1) ; (2,2) ; (2,5) ; (2,7) ; (2,8) ;$
 $(5,1) ; (5,2) ; (5,5) ; (5,7) ; (5,8) ; (7,1) ;$
 $(7,2) ; (7,5) ; (7,7) ; (7,8) ; (8,1) ; (8,2) ;$
 $(8,5) ; (8,7) ; (8,8) \}$

(b) $W = \{ (1,2) ; (1,5) ; (1,7) ; (1,8) ; (2,5)$
 $; (2,7) ; (2,8) ; (5,7) ; (5,8) ; (7,8) \}$

(c) $Z = \{ (1,5) ; (2,7) \}$

(d) $W = \{ (5,1) \}$

Lista 2

1) **(a)** 1. $f = [-4;4]$

$$g = [-3;3]$$

2. $f = [-5;5]$

$$g = [-4;5]$$

(b) 1. $f(-2) = -1$

$$g(3) = -4$$

2. $f(-2) = -2$

$$g(3) = 2$$

(c) 1. $f(x) = g(x) \rightarrow x = -1$

2. $f(x) = g(x) \rightarrow x = -2$ ou $x = 4$

(d) 1. $f(x) = 2 \rightarrow x = 1$

2. $f(x) = 2 \rightarrow x = -4$ ou $x = 4$

(e) 1. $g(x) = 0 \rightarrow x = -1 ; x = 1 ; x = 2$

2. $g(x) = 0 \rightarrow x = -1$

2) **(a)** $D = \{ x \in \mathbb{R} / x > 5/2 \}$

(b) $D = \{ x \in \mathbb{R} / x \neq 5 \}$

(c) $D = \{ x \in \mathbb{R} / x > -5/3 \}$

(d) $D = \{ x \in \mathbb{R} / x \leq 3 \text{ ou } x \geq 7 \}$

(e) $D = \{ x \in \mathbb{R} / 0 < x < 5 \}$

(f) $D = \{ x \in \mathbb{R} / x > 0 \}$

(g) $D = \{ x \in \mathbb{R} / 0 \leq x \leq 20000 \}$

(h) $D = \{ x \in \mathbb{N} / 0 \leq x \leq 30000 \}$

(i) $D = \{ x \in \mathbb{Z} / x \geq 0 \}$

3) **(a)** -1

(b) 5/7

4) (a) $y = 4x - 11$

(b) $y = - (3x/8) + (17/8)$

(c) $y = (2x/5) + (18/5)$

(d) $y = -(x/2) + 2$

5) (a) $y = 2x$, $x \in N$

(b) $y = 51 - 2x$

(c) $D(x) = \{ x \in N / x \leq 25 \}$

(d) $y = 41$

6) (a) $y = 100000 + 10000x$

(b) $y = 140000$

(c) $D(x) = \{ x \in N / 0 < x \leq 40 \}$

7) (a) $y = 5 + 10x$

(b) $y = 55 - 10x$

(c) $D(x) = \{ x \in \mathbb{R} / 0 \leq x \leq 5,5 \}$

8) **(a)** $y = 50000 - 1000x$

(b) $D(x) = \{ x \in \mathbb{R} / 5 \leq x \leq 14 \}$

9) **(a)** $y = 10x$

(b) $D(x) = \{ x \in \mathbb{R} / 0 \leq x \leq 5000 \}$

10) **(a)** $y = 12x + 8000$

(b) $y = 20x$

(c) $D(x) = 8x - 8000$

Lista 3

1) $A(h) = \pi (100+ 50t)^2$

2) $A(r) = \pi r^2 \rightarrow D = \{ r \in R / r > 0 \}$

3) $A(L) = 6 L^2$

4) **(a)** $D(L) = L \sqrt{74}/7$

(b) $D(L) = L \sqrt{2,96}$

5) $A(L) = L^2 \sqrt{3}/2$

6) $A(x) = -4x^2 + 1500$

7) **(a)** $Q(p) = -2p + 10$, **(b)** $R=5q-(q^2/2)$

8) **(a)** $L(q) = -2q^2 + 9q -10$

(b) $q= 9/4 \rightarrow$ quantidade vendida

$L= 1/8 \rightarrow$ Lucro

9) $A = x (\sqrt{400 - x^2})/4$

10) $V(x) = 4x^3 - 160x^2 + 1500x$

11) $R = q^3 - 15q + 50$

12) **(a)** $R = 500q / (1 + q)$

$$\mathbf{(b)} \ L = (-5q^2 + 395q + 100)/(1 + q)$$