



Lista de Exercícios – GABARITO

Avaliação de expressões lógicas

1) Crie a tabela verdade de cada expressão abaixo.

a) $\bar{A} + B$

A	B	$s1 = \bar{A}$	Y
0	0	1	1
0	1	1	1
1	0	0	0
1	1	0	1

b) $\bar{A} + \bar{B}$

A	B	$s1 = \bar{A}$	$s2 = \bar{B}$	Y
0	0	1	1	1
0	1	1	0	1
1	0	0	1	1
1	1	0	0	0

c) $A \cdot B + C$

A	B	C	$s1 = A \cdot B$	$Y = s1 + C$
0	0	0	0	0
0	0	1	0	1
0	1	0	0	0
0	1	1	0	1
1	0	0	0	0
1	0	1	0	1
1	1	0	1	1
1	1	1	1	1

d) $A \cdot (B + C)$

A	B	C	$s1 = B + C$	$Y = A \cdot s1$
0	0	0	0	0
0	0	1	1	0
0	1	0	1	0
0	1	1	1	0
1	0	0	0	0
1	0	1	1	1
1	1	0	1	1
1	1	1	1	1

e) $A \cdot (\overline{B} + C)$

A	B	C	$s1 = \overline{B}$	$s2 = s1 + C$	$Y = A \cdot s2$
0	0	0	1	1	0
0	0	1	1	1	0
0	1	0	0	0	0
0	1	1	0	1	0
1	0	0	1	1	1
1	0	1	1	1	1
1	1	0	0	0	0
1	1	1	0	1	1

f) $\overline{A \cdot B} \cdot C$

A	B	C	$s1 = A \cdot B$	$s2 = \overline{s1}$	$Y = s2 \cdot C$
0	0	0	0	1	0
0	0	1	0	1	1
0	1	0	0	1	0
0	1	1	0	1	1
1	0	0	0	1	0
1	0	1	0	1	1
1	1	0	1	0	0
1	1	1	1	0	0

g) $\overline{A} \cdot \overline{B} \cdot C$

A	B	C	$s1 = \overline{A}$	$s2 = \overline{B}$	$Y = s1 \cdot s2 \cdot C$
0	0	0	1	1	0
0	0	1	1	1	1
0	1	0	1	0	0
0	1	1	1	0	0
1	0	0	0	1	0
1	0	1	0	1	0
1	1	0	0	0	0
1	1	1	0	0	0

h) $\overline{A \cdot B} + (C + D)$

A	B	C	D	$s1 = A \cdot B$	$s2 = C + D$	$s3 = \overline{s1}$	$Y = s2 + s3$
0	0	0	0	0	0	1	1
0	0	0	1	0	1	1	1
0	0	1	0	0	1	1	1
0	0	1	1	0	1	1	1
0	1	0	0	0	0	1	1
0	1	0	1	0	1	1	1
0	1	1	0	0	1	1	1
0	1	1	1	0	1	1	1
1	0	0	0	0	0	1	1
1	0	0	1	0	1	1	1
1	0	1	0	0	1	1	1
1	0	1	1	0	1	1	1
1	1	0	0	1	0	0	0
1	1	0	1	1	1	0	1
1	1	1	0	1	1	0	1
1	1	1	1	1	1	0	1

i) $\overline{A \cdot B \cdot C}$

A	B	C	$s1 = A \cdot B$	$s2 = \overline{s1}$	$s3 = s2 \cdot C$	$Y = \overline{s3}$
0	0	0	0	1	0	1
0	0	1	0	1	1	0
0	1	0	0	1	0	1
0	1	1	0	1	1	0
1	0	0	0	1	0	1
1	0	1	0	1	1	0
1	1	0	1	0	0	1
1	1	1	1	0	0	1

j) $\overline{A + B \cdot C}$

A	B	C	$s1 = A + B$	$s2 = \overline{s1}$	$s3 = s2 \cdot C$	$Y = \overline{s3}$
0	0	0	0	1	0	1
0	0	1	0	1	1	0
0	1	0	1	0	0	1
0	1	1	1	0	0	1
1	0	0	1	0	0	1
1	0	1	1	0	0	1
1	1	0	1	0	0	1
1	1	1	1	0	0	1

k) $\overline{A + B} \cdot \overline{C}$

A	B	C	$s1 = A + B$	$s2 = \overline{s1}$	$s3 = \overline{C}$	$Y = s2 \cdot s3$
0	0	0	0	1	1	1
0	0	1	0	1	0	0
0	1	0	1	0	1	0
0	1	1	1	0	0	0
1	0	0	1	0	1	0
1	0	1	1	0	0	0
1	1	0	1	0	1	0
1	1	1	1	0	0	0

a) $\overline{\overline{A + B} \cdot \overline{C}}$

A	B	C	$s1 = A + B$	$s2 = \overline{s1}$	$s3 = \overline{C}$	$s4 = s2 \cdot s3$	$Y = \overline{s4}$
0	0	0	0	1	1	1	0
0	0	1	0	1	0	0	1
0	1	0	1	0	1	0	1
0	1	1	1	0	0	0	1
1	0	0	1	0	1	0	1
1	0	1	1	0	0	0	1
1	1	0	1	0	1	0	1
1	1	1	1	0	0	0	1

b) $(A \cdot B) \cdot (\overline{C} + C)$

A	B	C	$s1 = A \cdot B$	$s2 = \overline{C}$	$s3 = s2 + C$	$Y = s1 \cdot s3$
0	0	0	0	1	1	0
0	0	1	0	0	1	0
0	1	0	0	1	1	0
0	1	1	0	0	1	0
1	0	0	0	1	1	0
1	0	1	0	0	1	0
1	1	0	1	1	1	1
1	1	1	1	0	1	1

c) $E + (A \cdot \overline{B}) \cdot \overline{\overline{C} + \overline{D}}$

A	B	C	D	E	$s1 = \overline{B}$	$s2 = A \cdot s1$	$s3 = \overline{C}$	$s4 = \overline{D}$	$s5 = s3 + s4$	$s6 = \overline{s5}$	$s7 = s2 \cdot s6$	$Y = E + s7$
0	0	0	0	0	1	0	1	1	1	0	0	0
0	0	0	0	1	1	0	1	1	1	0	0	1
0	0	0	1	0	1	0	1	0	1	0	0	0
0	0	0	1	1	1	0	1	0	1	0	0	1
0	0	1	0	0	1	0	0	1	1	0	0	0
0	0	1	0	1	1	0	0	1	1	0	0	1
0	0	1	1	0	1	0	0	0	0	1	0	0
0	0	1	1	1	1	0	0	0	0	1	0	1
0	1	0	0	0	0	0	1	1	1	0	0	0
0	1	0	0	1	0	0	1	1	1	0	0	1
0	1	0	1	0	0	0	1	0	1	0	0	0
0	1	0	1	1	0	0	1	0	1	0	0	1
0	1	1	0	0	0	0	0	1	1	0	0	0
0	1	1	0	1	0	0	0	1	1	0	0	1
0	1	1	1	0	0	0	0	0	0	1	0	0
0	1	1	1	1	0	0	0	0	0	1	0	1
1	0	0	0	0	1	1	1	1	1	0	0	0
1	0	0	0	1	1	1	1	1	1	0	0	1
1	0	0	1	0	1	1	1	0	1	0	0	0
1	0	0	1	1	1	1	1	0	1	0	0	1
1	0	1	0	0	1	1	0	1	1	0	0	0
1	0	1	0	1	1	1	0	1	1	0	0	1
1	0	1	1	0	1	1	0	0	0	1	1	1
1	0	1	1	1	1	1	0	0	0	1	1	1
1	1	0	0	0	0	0	1	1	1	0	0	0
1	1	0	0	1	0	0	1	1	1	0	0	1
1	1	0	1	0	0	0	1	0	1	0	0	0
1	1	0	1	1	0	0	1	0	1	0	0	1
1	1	1	0	0	0	0	0	1	1	0	0	0
1	1	1	0	1	0	0	0	1	1	0	0	1
1	1	1	1	0	0	0	0	0	0	1	0	0
1	1	1	1	1	0	0	0	0	0	1	0	1

d) $(A + \overline{B} + C) \cdot (A + B + \overline{C})$

A	B	C	$s1 = \overline{B}$	$s2 = \overline{C}$	$s3 = A + s1 + C$	$s4 = A + B + s2$	$Y = s3 \cdot s4$
0	0	0	0	1	0	1	0
0	0	1	0	0	1	0	0
0	1	0	0	1	0	1	0
0	1	1	0	0	1	1	1
1	0	0	0	1	1	1	1
1	0	1	0	0	1	1	1
1	1	0	1	1	1	1	1
1	1	1	1	0	1	1	1

e) $(A \cdot B) \cdot (\overline{C} + D) + (A \cdot C)$

A	B	C	D	$s1 = A \cdot B$	$s2 = \overline{C}$	$s3 = s2 + D$	$s4 = A \cdot C$	$s5 = s1 \cdot s3$	$Y = s5 + s4$
0	0	0	0	0	1	1	0	0	0
0	0	0	1	0	1	1	0	0	0
0	0	1	0	0	0	0	0	0	0
0	0	1	1	0	0	1	0	0	0
0	1	0	0	0	1	1	0	0	0
0	1	0	1	0	1	1	0	0	0
0	1	1	0	0	0	0	0	0	0
0	1	1	1	0	0	1	0	0	0
1	0	0	0	0	1	1	0	0	0
1	0	0	1	0	1	1	0	0	0
1	0	1	0	0	0	0	1	0	1
1	0	1	1	0	0	1	1	0	1
1	1	0	0	1	1	1	0	1	1
1	1	0	1	1	1	1	0	1	1
1	1	1	0	1	0	0	1	0	1
1	1	1	1	1	0	1	1	1	1

f) $\overline{(A \cdot B) \cdot (\overline{C} + D) + (A \cdot C)}$

g) $A \cdot ((A + B + C) \cdot (D + C))$

h) $(A + \overline{D}) \cdot ((A + B + C) \cdot (D + C))$

i) $1 \cdot (A \cdot B)$

j) $0 + B + C$

k) $(1 + A) + (A \cdot B)$

l) $(1 + A) \cdot (A \cdot B)$

m) $\overline{(1 + B) + ((A + B + C) \cdot (D + C))}$