

Universidade Federal do Paraná
Departamento de Informática
Métodos Numéricos (CI-202)

Respostas da Lista de Exercícios - Representação Numérica e Erros
Prof. David Menotti - Segundo Semestre de 2019

1. Converta os números decimais para binário:

- (a) $-23 \rightarrow -10111_2$
- (b) $64 \rightarrow 1000000_2$
- (c) $-0,375 \rightarrow -0.011_2$
- (d) $14,75 \rightarrow 1110.11_2$
- (e) $22,375 \rightarrow 10110.011_2$
- (f) $15,3125 \rightarrow 1111.0101_2$
- (g) $-5,25 \rightarrow -101.01_2$

2. Converta os números binários para decimal:

- (a) $0010\ 1011 \rightarrow 43_{10}$
- (b) $-1\ 1110\ 1111 \rightarrow -495_{10}$
- (c) $0,101 \rightarrow 0.625_{10}$
- (d) $-0,0111 \rightarrow -0.4375_{10}$
- (e) $-1\ 0101,1001 \rightarrow -21.5625_{10}$
- (f) $1,1101 \rightarrow 1.8125_{10}$
- (g) $1001,01001 \rightarrow 9.28125_{10}$

3. Mostre como os números convertidos na questão 1 são representados em ponto flutuante em uma máquina $F(\beta=2, t=5, I=-8, S=8)$

- (a)

1	1	0	1	1	1	0	0	1	0	1
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SM M SE E
- (b)

0	1	0	0	0	0	0	0	1	1	1
---	---	---	---	---	---	---	---	---	---	---

SM M SE E
- (c)

1	1	1	0	0	0	1	0	0	0	1
---	---	---	---	---	---	---	---	---	---	---

SM M SE E
- (d)

0	1	1	1	0	1	0	0	1	0	0
---	---	---	---	---	---	---	---	---	---	---

SM M SE E

- (e)

0	1	0	1	1	0	0	0	1	0	1
---	---	---	---	---	---	---	---	---	---	---

SM M SE E
- (f)

0	1	1	1	1	0	0	0	1	0	0
---	---	---	---	---	---	---	---	---	---	---

SM M SE E
- (g)

1	1	0	1	0	1	0	0	0	1	1
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SM M SE E

4. Mostre como os números convertidos na questão 2 são representados em ponto flutuante em uma máquina $F(\beta=10, t=3, I=-5, S=5)$

- (a)

0	4	3	0	0	2
---	---	---	---	---	---

SM M SE E
- (b)

1	4	9	5	0	3
---	---	---	---	---	---

SM M SE E
- (c)

0	6	2	5	0	0
---	---	---	---	---	---

SM M SE E
- (d) Por truncamento:

1	4	3	7	0	0
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Por arredondamento:

1	4	3	8	0	0
---	---	---	---	---	---

SM M SE E
- (e) Por truncamento:

1	2	1	5	0	2
---	---	---	---	---	---

Por arredondamento:

1	2	1	6	0	2
---	---	---	---	---	---

SM M SE E
- (f)

0	1	8	1	0	1
---	---	---	---	---	---

SM M SE E
- (g)

0	9	2	8	0	1
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SM M SE E