

Lista de Exercícios sobre Sistema de Numeração (Respostas no Final da Lista)

1. Faça as conversões de base abaixo: (Bases inferiores ou iguais a 10)

- | | |
|---|--|
| <p>a) $(1593)_{10} = (\quad)_5$
 b) $(439)_{10} = (\quad)_4$
 c) $(2073)_{10} = (\quad)_8$
 d) $(325)_6 = (\quad)_{10}$
 e) $(257)_8 = (\quad)_{10}$
 f) $(3213)_4 = (\quad)_{10}$
 g) $(354)_7 = (\quad)_5$
 h) $(224)_5 = (\quad)_3$
 i) $(235)_6 = (\quad)_7$
 j) $(523)_7 = (\quad)_5$
 k) $(243)_5 = (\quad)_3$
 l) $(435)_6 = (\quad)_7$
 m) $(647)_8 = (\quad)_6$</p> | <p>n) $(314)_5 = (\quad)_2$
 o) $(723)_8 = (\quad)_9$
 p) $(412)_7 = (\quad)_3$
 q) $(321)_8 = (\quad)_9$
 r) $(466)_7 = (\quad)_4$
 s) $(178)_9 = (\quad)_2$
 t) $(516)_8 = (\quad)_7$
 u) $(121)_3 = (\quad)_9$
 v) $(421)_5 = (\quad)_4$
 w) $(312)_6 = (\quad)_9$
 x) $(878)_9 = (\quad)_3$
 y) $(656)_7 = (\quad)_6$
 z) $(543)_6 = (\quad)_4$</p> |
|---|--|

2. Faça as conversões de base abaixo: (Bases superiores a base 10)

- | | |
|--|---|
| <p>a) $(1593)_{10} = (\quad)_{16}$
 b) $(439)_{10} = (\quad)_{15}$
 c) $(2073)_{10} = (\quad)_{14}$
 d) $(325)_{10} = (\quad)_{13}$
 e) $(257)_{10} = (\quad)_{12}$
 f) $(3213)_{10} = (\quad)_{11}$
 g) $(3A4)_{11} = (\quad)_{10}$
 h) $(A2B)_{12} = (\quad)_{10}$
 i) $(2C5)_{13} = (\quad)_{10}$
 j) $(A2D)_{14} = (\quad)_{10}$
 k) $(E4B)_{15} = (\quad)_{10}$
 l) $(ABF)_{16} = (\quad)_{10}$
 m) $(647)_8 = (\quad)_{16}$</p> | <p>n) $(314)_5 = (\quad)_{12}$
 o) $(7A3)_{11} = (\quad)_9$
 p) $(41B)_{12} = (\quad)_3$
 q) $(F21)_{16} = (\quad)_{12}$
 r) $(4C6)_{13} = (\quad)_{16}$
 s) $(178)_{14} = (\quad)_5$
 t) $(516)_{15} = (\quad)_{13}$
 u) $(121)_{12} = (\quad)_9$
 v) $(4E1)_{15} = (\quad)_4$
 w) $(B1C)_{13} = (\quad)_9$
 x) $(878)_9 = (\quad)_{11}$
 y) $(65A)_{11} = (\quad)_{15}$
 z) $(5E4)_{16} = (\quad)_5$</p> |
|--|---|

3. Faça as conversões de base abaixo: (Use a tabela de Conversão)

- | | |
|---|---|
| <p>a) $(15B3)_{16} = (\quad)_2$
 b) $(439)_{16} = (\quad)_2$
 c) $(2A73)_{16} = (\quad)_2$
 d) $(3CDDA5)_{16} = (\quad)_2$
 e) $(57DF21)_{16} = (\quad)_2$
 f) $(F21EBD)_{16} = (\quad)_2$
 g) $(3A45E)_{16} = (\quad)_2$
 h) $(A2B79)_{16} = (\quad)_2$
 i) $(2C5DF)_{16} = (\quad)_2$
 j) $(A2D5A2)_{16} = (\quad)_2$
 k) $(E4BF4A)_{16} = (\quad)_2$
 l) $(ABF412)_{16} = (\quad)_2$
 m) $(63DA7FE)_{16} = (\quad)_2$</p> | <p>n) $(10111000101001101)_2 = (\quad)_{16}$
 o) $(11100110001110)_2 = (\quad)_{16}$
 p) $(1010100001110)_2 = (\quad)_{16}$
 q) $(1011000011110010)_2 = (\quad)_{16}$
 r) $(1111100010101010)_2 = (\quad)_{16}$
 s) $(10000111010100001)_2 = (\quad)_{16}$
 t) $(11111111000001101)_2 = (\quad)_{16}$
 u) $(100110011111001)_2 = (\quad)_{16}$
 v) $(1010000110001111)_2 = (\quad)_{16}$
 w) $(1100110011111000)_2 = (\quad)_{16}$
 x) $(101010000001111)_2 = (\quad)_{16}$
 y) $(111110001111100)_2 = (\quad)_{16}$
 z) $(11101110111011)_2 = (\quad)_{16}$</p> |
|---|---|

4. Dados os números abaixo, informe quantos bits são necessários para representá-los.

- a) 5.467 →
- b) 67.894 →
- c) 23.546 →
- d) 18.769 →
- e) 33.098 →
- f) 21.345 →
- g) 65.535 →
- h) 133.054 →
- i) 1.048.577 →
- j) 500.786 →
- k) 43.629 →
- l) 3.021.392 →
- m) 37.639.478 →

- n) 140.361 →
- o) 8.388.651 →
- p) 268.433.456 →
- q) 5.635.489.671 →
- r) 17.362.182 →
- s) 39.698.563.712 →
- t) 19.456 →
- u) 145.726.693 →
- v) 71.692.453 →
- w) 396.591 →
- x) 2.140.365.194 →
- y) 2.027.356 →
- z) 140.333.999 →

5. Apresente os valores abaixo nas suas respectivas faixa de apresentação.

- a) $2^{17} =$
- b) $2^{45} =$
- c) $2^{12} =$
- d) $2^{38} =$
- e) $2^{27} =$
- f) $2^{19} =$
- g) $2^{20} =$
- h) $2^{31} =$
- i) $2^{49} =$
- j) $2^{37} =$
- k) $2^{22} =$
- l) $2^{13} =$
- m) $2^{30} =$

- n) $2^{43} =$
- o) $2^{48} =$
- p) $2^{11} =$
- q) $2^{25} =$
- r) $2^{34} =$
- s) $2^{46} =$
- t) $2^{47} =$
- u) $2^{32} =$
- v) $2^{15} =$
- w) $2^{10} =$
- x) $2^{41} =$
- y) $2^{40} =$
- z) $2^{29} =$

RESPOSTAS DA LISTA DE EXERCÍCIOS

Resposta da Lista de Exercícios sobre Sistema de Numeração

1. Faça as conversões de base abaixo: (Bases inferiores ou iguais a 10)

- | | |
|------------------------------|-----------------------------|
| a) $(1593)_{10} = (22333)_5$ | n) $(314)_5 = (1010100)_2$ |
| b) $(439)_{10} = (12313)_4$ | o) $(723)_8 = (568)_9$ |
| c) $(2073)_{10} = (4031)_8$ | p) $(412)_7 = (21121)_3$ |
| d) $(325)_6 = (125)_{10}$ | q) $(321)_8 = (252)_9$ |
| e) $(257)_8 = (175)_{10}$ | r) $(466)_7 = (3310)_4$ |
| f) $(3213)_4 = (231)_{10}$ | s) $(178)_9 = (10011000)_2$ |
| g) $(354)_7 = (1221)_5$ | t) $(516)_8 = (655)_7$ |
| h) $(224)_5 = (2101)_3$ | u) $(121)_3 = (17)_9$ |
| i) $(235)_6 = (164)_7$ | v) $(421)_5 = (1233)_4$ |
| j) $(523)_7 = (2022)_5$ | w) $(312)_6 = (138)_9$ |
| k) $(243)_5 = (2201)_3$ | x) $(878)_9 = (222122)_3$ |
| l) $(435)_6 = (326)_7$ | y) $(656)_7 = (1315)_6$ |
| m) $(647)_8 = (1543)_6$ | z) $(543)_6 = (3033)_4$ |

2. Faça as conversões de base abaixo: (Bases superiores a base 10)

- | | |
|--------------------------------|-------------------------------|
| a) $(1593)_{10} = (639)_{16}$ | n) $(314)_5 = (70)_{12}$ |
| b) $(439)_{10} = (1E4)_{15}$ | o) $(7A3)_{11} = (1276)_9$ |
| c) $(2073)_{10} = (A81)_{14}$ | p) $(41B)_{12} = (211012)_3$ |
| d) $(325)_{10} = (1C0)_{13}$ | q) $(F21)_{16} = (22A9)_{12}$ |
| e) $(257)_{10} = (195)_{12}$ | r) $(4C6)_{13} = (346)_{16}$ |
| f) $(3213)_{10} = (2461)_{11}$ | s) $(178)_{14} = (2202)_5$ |
| g) $(3A4)_{11} = (477)_{10}$ | t) $(516)_{15} = (6A2)_{13}$ |
| h) $(A2B)_{12} = (1475)_{10}$ | u) $(121)_{12} = (207)_9$ |
| i) $(2C5)_{13} = (499)_{10}$ | v) $(4E1)_{15} = (101113)_4$ |
| j) $(A2D)_{14} = (2001)_{10}$ | w) $(B1C)_{13} = (2523)_9$ |
| k) $(E4B)_{15} = (3221)_{10}$ | x) $(878)_9 = (5A4)_{11}$ |
| l) $(ABF)_{16} = (2751)_{10}$ | y) $(65A)_{11} = (37B)_{15}$ |
| m) $(647)_8 = (1A7)_{16}$ | z) $(5E4)_{16} = (22013)_5$ |

3. Faça as conversões de base abaixo: (Use a tabela de Conversão)

- | | |
|--|--|
| a) $(15B3)_{16} = (1010110110011)_2$ | n) $(10111000101001101)_2 = (714D)_{16}$ |
| b) $(439)_{16} = (10000111001)_2$ | o) $(11100110001110)_2 = (398E)_{16}$ |
| c) $(2A73)_{16} = (10101001110011)_2$ | p) $(1010100001110)_2 = (150E)_{16}$ |
| d) $(3CDDA5)_{16} = (1111001101110110100101)_2$ | q) $(1011000011110010)_2 = (B0F2)_{16}$ |
| e) $(57DF21)_{16} = (10101111101111100100001)_2$ | r) $(1111100010101010)_2 = (F8AA)_{16}$ |
| f) $(F21EBD)_{16} = (11110010000111110111101)_2$ | s) $(10000111010100001)_2 = (EA1)_{16}$ |
| g) $(3A45E)_{16} = (111010010001011110)_2$ | t) $(11111111000001101)_2 = (FE0D)_{16}$ |
| h) $(A2B79)_{16} = (10100010101101111001)_2$ | u) $(100110011111001)_2 = (4CF9)_{16}$ |
| i) $(2C5DF)_{16} = (101100010111011111)_2$ | v) $(1010000110001111)_2 = (A18F)_{16}$ |
| j) $(A2D5A2)_{16} = (101000101101010110100010)_2$ | w) $(1100110011111000)_2 = (CCF8)_{16}$ |
| k) $(E4BF4A)_{16} = (11100100101111101001010)_2$ | x) $(101010000001111)_2 = (540F)_{16}$ |
| l) $(ABF412)_{16} = (101010111111010000010010)_2$ | y) $(111110001111100)_2 = (7C7C)_{16}$ |
| m) $(63DA7FE)_{16} = (11000111101101001111111110)_2$ | z) $(11101110111011)_2 = (3BBB)_{16}$ |

4. Dados os números abaixo, informe quantos bits são necessários para representá-los.

- a) 5.467 → 13 bits
- b) 67.894 → 17 bits
- c) 23.546 → 15 bits
- d) 18.769 → 15 bits
- e) 33.098 → 16 bits
- f) 21.345 → 15 bits
- g) 65.535 → 16 bits
- h) 133.054 → 18 bits
- i) 1.048.577 → 21 bits
- j) 500.786 → 19 bits
- k) 43.629 → 16 bits
- l) 3.021.392 → 22 bits
- m) 37.639.478 → 26 bits

- n) 140.361 → 18 bits
- o) 8.388.651 → 24 bits
- p) 268.433.456 → 28 bits
- q) 5.635.489.671 → 33 bits
- r) 17.362.182 → 25 bits
- s) 39.698.563.712 → 36 bits
- t) 19.456 → 15 bits
- u) 145.726.693 → 28 bits
- v) 71.692.453 → 27 bits
- w) 396.591 → 19 bits
- x) 2.140.365.194 → 31 bits
- y) 2.027.356 → 21 bits
- z) 140.333.999 → 28 bits

5. Apresente os valores abaixo nas suas respectivas faixa de apresentação.

- a) $2^{17} = 128K$
- b) $2^{45} = 32T$
- c) $2^{12} = 4K$
- d) $2^{38} = 256G$
- e) $2^{27} = 128M$
- f) $2^{19} = 512K$
- g) $2^{20} = 1M$
- h) $2^{31} = 2G$
- i) $2^{49} = 512T$
- j) $2^{37} = 128G$
- k) $2^{22} = 4M$
- l) $2^{13} = 8K$
- m) $2^{30} = 1G$

- n) $2^{43} = 8T$
- o) $2^{48} = 256T$
- p) $2^{11} = 2K$
- q) $2^{25} = 32M$
- r) $2^{34} = 16G$
- s) $2^{46} = 64T$
- t) $2^{47} = 128T$
- u) $2^{32} = 4G$
- v) $2^{15} = 32K$
- w) $2^{10} = 1K$
- x) $2^{41} = 2T$
- y) $2^{40} = 1T$
- z) $2^{29} = 512M$