an \* qn

a – cifre u zapisu broja (koeficijent)

n – pozicija cifre u zapisu broja (težina)

q – osnova brojnog sistema (osnova)

Stepen recipročne vrednosti (negativni stepen)

0.001 = 1 \* 2-3 = 1 \* = 1 \* 1/23 = 1 \* 1/8 = 1 \* 0.125 = 0.125

Konverzija iz bilo kog pozicionog sistema u dekadni

Primer

586(10) = 5 \* 102 + 8 \* 101 + 6 \* 100 = 5 \* 100 + 6 \* 10 + 6 \* 1 = 500 + 80 + 6 = 586(10)

1101(2) = 1 \* 23 + 1 \* 22 + 0 \* 21 + 1 \* 20 = 8 + 4 + 0 + 1 = 13(10)

1F3(16) = 1 \* 162 + 15 \* 161 + 3 \* 160 = 256 + 240 + 3 = 499(10)

1110.11(2) = 1 \* 23 + 1 \* 22 + 1 \* 21 + 0 \* 20 + 1 \* 2-1 + 1 \* 2-2 = 8 + 4 + 2 + 0 + 0.5 + 0.25 = 14.75(10)

Vežba

100110(2) = 1 \* 21 + 1 \* 22 + 1 \* 25 = 2 + 4 + 32 = 38(10)

1001.101(2) = 1 \* 2-3 + 1 \* 2-1 + 1 \* 20 + 1 \* 23 = 0.125 + 0.5 + 1 + 8 = 9.625(10)

652(8) = 2 \* 80 + 5 \* 81 + 6 \* 82 = 2 + 40 + 384 = 426(10)

45.12(8) = 2 \* 8-2 + 1 \* 8-1 + 5 \* 80 + 4 \* 81 = 0.015 + 0.125 + 5 + 32 = 37.14(10)

A3C(16) = 12 \* 160 + 3 \* 161 + 10 \* 162 = 12 + 48 + 2560 = 2620(10)

BD.25(16) = 5 \* 16-2 + 2 \* 16-1 + 13 \* 160 + 11 \* 161 = 0.0195 + 0.125 + 13 + 176 = 189.1445(10)

Konverzija iz dekadnog u bilo koji drugi brojni sistem

Primer

43(10) = ?(2)

43 / 2 = 21(1), 21 / 2 = 10(1), 10 / 2 = 5(0), 5 / 2 = 2(1), 2 / 2 = 1(0), 1 / 2 = 0(1)

43(10) = 101011(2)

14.75(10) = ?(2)

14 / 2 = 7(0), 7 / 2 = 3(1), 3 / 2 = 1(1), 1 / 2 =0(1)

0.75 \* 2 = 1.5, 0.5 \* 2 = 1.0

14.75(10) = 1110.11(2)

Vežba

37(10) = ?(2)

37 / 2 = 18(1), 18 / 2 = 9(0), 9 / 2 = 4(1), 4 / 2 = 2(0), 2 / 2 = 1(0), 1 / 2 = 0 (1)

37(10) = 100101(2)

52.15(10) = ?(2)

52 / 2 = 26(0), 26 / 2 = 13 (0), 13 / 2 = 6(1), 6 / 2 =3(0), 3 / 2 = 1(1), 1 / 2 = 0(1)

0.15 \* 2 = 0.3, 0.3 \* 2 = 0.6, 0.6 \* 2 = 1.2, 0.2 \* 2 = 0.4, 0.4 \* 2 = 0.8 ...

52.15(10) = 110100.00100(2)

25(10) = ?(16)

25 / 16 = 1(9), 1 / 16 = 0(1)

25(10) = 19(16)

100.25(10) = ?(16)

100 / 16 = 6(4), 6 / 16 = 0(6)

0.25 \* 16 = 4.0

100.25(10) = 64.4(16)

13(10) = ?(8)

13 / 8 = 1(5), 1 / 8 = 0(1)

13(10) = 15(8)

21.19(10) = ?(8)

21 / 8 = 2(5), 2 / 8 = 0(2)

0.19 \* 8 = 1.52, 0.52 \* 8 = 4.16, 0.16 \* 8 = 1.28, 0.28 \*8 = 2.24, 0.24 \* 8 = 1.92

21.19(10) = 25.14121(8)

Konverzija između brojevnih sistema čije su osnove 2

Primer

A5CF(16) = ?(2)

A = 0110, 5 = 0011, C = 1100, F = 1111

A5CF(16) = 0110001111001111(2)

11000101101(2) = ?(16)

0110 = 6, 0010 = 2, 1101 = 13 = D

11000101101(2) = 62D(16)

Vežba

101101(2) = ?(16)

0010 = 2, 1101 = D

101101(2) = 2D(16)

1110100100011011(2) = ?(16)

1110 = E, 1001 = 9, 0001 = 1, 1011 = B

1110100100011011(2) = E91B(16)

F95C(16) = ?(2)

F = 1111, 9 = 1001, 5 = 0101, C = 1100

F95C(16) = 1111100101011100(2)

1100110011(2) = ?(8)

001 = 1, 100 = 4, 110 = 6, 011 = 3

1100110011(2) = 1463(8)

10001101(2) = ?(8)

010 = 2, 001 = 1, 101 = 5

10001101(2) = 215(8)

443(8) = ?(2)

4 = 100, 4 = 100, 3 = 011

443(8) = 100100011?(2)

2532(8) = ?(2)

2 = 010, 5 = 101, 3 = 011, 2 = 010

2532(8) = 010101011010(2)

Konvertovati dekadne brojeve u binarne i heksadecimalne

241(10) = 11110001(2) = F1(16)

241 / 2 = 120(1), 120 / 2 = 60(0), 60 / 2 = 30(0), 30 / 2 = 15(0), 15 / 2 = 7(1), 7 / 2 = 3(1), 3 / 2 = 1(1), 1 / 2 = 0(1)

241 / 16 = 15(1), 15 / 16 = 0(15)

552(10) = 1000101000(2) = 228(16)

552 / 2 = 276(0), 276 / 2 = 138(0), 138 / 2 = 69(0), 69 / 2 = 34(1), 34 / 2 = 17(0), 17 / 2 = 8(1), 8 / 2 = 4(0), 4 / 2 = 2(0), 2 / 2 =1(0), 1 / 2 = 0(1)

552 / 16 = 34(8), 34 / 16 = 2(2), 2 / 16 = 0(2)

89(10) = 1011001(2) = 59(16)

89 / 2 = 44(1), 44 / 2 = 22(0), 22 / 2 = 11(0), 11 / 2 = 5(1), 5 / 2 = 2(1), 2 / 2 = 1(0), 1 / 2 = 0(1)

89 / 16 = 5(9), 5 / 16 = 0(5)

Konvertovati binarne brojeve u dekadne i heksadecimalne

11001110(2) = 206(10) = CE(16)

1 \* 27 + 1 \* 26 + 1 \* 23 + 1 \* 22 + 1 \* 21 = 128 + 64 + 8 + 4 + 2

1100 = C, 1110 = E

100001(2) = 33(10) = 21(16)

1 \* 25 + 1 \* 20 = 32 + 1

0010 = 2, 0001 = 1

110110(2) = 54(10) = 36(16)

1 \* 25 + 1 \* 24 + 1 \* 22 + 1 \* 21 = 32 + 16 + 4 + 2

0011 = 3, 0110 = 6

Konvertovati heksadecimalne brojeve u dekadne i binarne

AE12(16) = 44562(10) = 1010111000010010(2)

A \* 163 + E \* 162 + 1 \* 161 + 2 \* 160 = 40960 + 3584 + 16 + 2

A = 1010, E = 1110, 1 = 0001, 2 = 0010

256(16) = 598(10) = 1001010110(2)

2 \* 162 + 5 \* 161 + 6 \* 160 = 512 + 80 + 6

2 = 0010, 5 = 0101, 6 = 0110

CD2D(16) = 52525(10) = 1100110100101101(2)

C \* 163 + D \* 162 + 2 \* 161 + D \* 160 = 49152 + 3328 + 32 + 13

C = 1100, D = 1101, 2 = 0010, D = 1101