

Blog Entry © Friday, February 20, 2026, by James Pate Williams, Jr., Wayback C# SHA-3 Test Application Results

The original application was created on February 3, 2015. Today I modified the message input method.

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SHA3 Test (c) 2/3/2015 by James Pate Williams, Jr. See FIPS 202

Hex String n

Len = 0
Msg Bits =
Message Digest SHA3-224
6b 4e 03 42 36 67 db b7 3b 6e 15 45 4f 0e b1 ab
d4 59 7f 9a 1b 07 8e 3f 5b 5a 6b c7

Len = 1
Msg Bits = 1
Message Digest SHA3-224
6f 2f c5 4a 6b 11 a6 da 61 1e d7 34 50 5b 9c ab
89 ee cc 1d c7 dd 2d eb d2 7b d1 c9

Len = 8
Msg Bits = 11110101
Message Digest SHA3-224
15 45 e2 34 dd 64 8d 51 af e8 5b 75 8f 86 5c 48
55 71 5c cc f2 76 ee b0 04 a3 7a 74

Len = 16
Msg Bits = 0100111100100100
Message Digest SHA3-224
67 a0 68 64 8b f9 0b 48 38 3d 2e 3a 0a d2 28 dc
97 60 d1 53 3f e4 a5 a4 fa 1f fc 43

☒ SHA3-224

☐ SHA3-256

☐ SHA3-384

☐ SHA3-512

Figure 1 SHA3-224 n = 0, 1, 8, and 16 Bits

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Hex String493d5cfa61d91664981408e93ad60756f5e84e4ee9b42b3302n500

Len = 500

Msg Bits =

11101010100100110001110011010000101110110010111
00001110111111100010001101010001111100110000010
01010010011010000000101110110000100010110001001
10000011111011010110011101000111010100010111010
0001010001111110010101101011100100001001000010
01110101001100110001110100101111101111011000100
10110110001111001010001001001010111100001110100
10111111000011010011011011010000010011000011001
00101000000100001001011101011100011010111110000
00110101010101111000101110111001001110010100101
110010110111010100110011000100

Message Digest SHA3-224

fc 67 cf 6c 7b 15 7b 31 4a c5 78 d4 03 44 f7 ca
9c 74 56 23 85 71 3d b4 28 09 f4 48

☒ SHA3-224

☐ SHA3-256

☐ SHA3-384

☐ SHA3-512

Hash

Clear

Figure 2 SHA3-224 n = 500 Bits

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Hex String n

Len = 575
Msg Bits =
01010001101011100111110110001101100001011001011
10010111011011001010111111000101101000100100001
01111111111111010100010111111100101000100101
1110010001101011000010111110010010011011111010
01101010000110011110011010101010000100001011010
11011010011010010110000111101001101101111010011
00011011000001100110100000011111000100101000001
00010111110001110100011001110101111001000000000
00000010011011010111100000111100001010110010011
01101100010001110101101110111010000111101000010
11010100100101011110001010000111110111101010110
01001010001100101101110111100000000010111001101
11001011100

Message Digest SHA3-224
10 8d 40 22 5f 7d 5c 36 48 fc 74 c4 d5 70 eb ff
b0 4a 10 3b 80 14 1e 8b bf 43 a3 13

☒ SHA3-224
☐ SHA3-256
☐ SHA3-384
☐ SHA3-512

Figure 3 SHA3-224 n = 575 Bits

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Hex String n

Len = 0
Msg Bits =
Message Digest SHA3-256
a7 ff c6 f8 bf 1e d7 66 51 c1 47 56 a0 61 d6 62
f5 80 ff 4d e4 3b 49 fa 82 d8 0a 4b 80 f8 43 4a

Len = 8
Msg Bits = 10010111
Message Digest SHA3-256
f0 d0 4d d1 e6 cf c2 9a 44 60 d5 21 79 68 52 f2
5d 9e f8 d2 8b 44 ee 91 ff 5b 75 9d 72 c1 e6 d6

Len = 16
Msg Bits = 0010101111101110
Message Digest SHA3-256
94 27 9e 8f 5c cd f6 e1 7f 29 2b 59 69 8a b4 e6
14 df e6 96 a4 6c 46 da 78 30 5f c6 a3 14 6a b7

Len = 32
Msg Bits = 11100111111011001000010010100000
Message Digest SHA3-256
3a 42 b6 8a b0 79 f2 8c 4c a3 c7 52 29 6f 27 90
06 c4 fe 78 b1 eb 79 d9 89 77 7f 05 1e 40 46 ae

☐ SHA3-224

☒ SHA3-256

☐ SHA3-384

☐ SHA3-512

Figure 4 SHA3-256 $n = 0, 8, 16, \text{ and } 32$ Bits

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Hex String n

Len = 512

Msg Bits =

11100110110001110010000101001011100100001000111
10011110100100010111110010110010110111110011001
01011100111111101011011101000101111111001001100
01000001000010010001111100111110100110100000000
00101110111100000011010100110101011101111110101
01011110100111001011001111101010001001111111111
10110100101010110110000000010011101110001101110
00010001010001010101100101101101011100100101101
01110111100011101000001011101111110010110001111
11011001001001100010100101011101000000000110011
0101101100100100010000111111010011000111110

Message Digest SHA3-256

9c 91 60 26 86 08 ef 09 fe 0b d3 92 7d 3d ff a0
c7 34 99 c5 28 94 3e 83 7b e4 67 b5 0e 5c 1f 1e

☐ SHA3-224

☒ SHA3-256

☐ SHA3-384

☐ SHA3-512

Hash

Clear

Figure 5 SHA3-256 n = 512 Bits

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Hex String n

Len = 0
Msg Bits =
Message Digest SHA3-384
0c 63 a7 5b 84 5e 4f 7d 01 10 7d 85 2e 4c 24 85
c5 1a 50 aa aa 94 fc 61 99 5e 71 bb ee 98 3a 2a
c3 71 38 31 26 4a db 47 fb 6b d1 e0 58 d5 f0 04

Len = 1
Msg Bits = 1
Message Digest SHA3-384
3f ae 45 36 cd 20 5e e0 8e d8 8e 0e 6f 11 52 71
7f 5a fe 18 1f 9a fe b5 08 50 7f 74 29 fd 50 31
55 8e 84 4e db 73 cb 19 b1 29 cf eb 55 08 26 17

Len = 8
Msg Bits = 00101001
Message Digest SHA3-384
b3 e0 e2 2a 5d 5d 01 d7 9c 76 b4 69 83 0a 46 a1
a7 b5 01 4f 36 c4 2e 1a ca a7 95 f2 97 53 61 92
32 db a0 58 44 84 df 8c 63 7f 16 c6 32 76 d1 60

☐ SHA3-224

☐ SHA3-256

☒ SHA3-384

☐ SHA3-512

Hash

Clear

Figure 6 SHA3-384 $n = 0, 1$, and 8 Bits

SHA3 Test (c) 2/3/2015 by James Pate Williams, Jr. See FIPS 202

Hex String n

Len = 512
Msg Bits =
0000000011000000010110011010110101111001111110110
001011101010100010100000001100100000010111011111
11000101110110101101101110000100000111011101011
00110110111011110010100000101111000001110110111
10011110101011111010111110001110000011000011000
10110100001101001011010100110010101100000011101
01100101010000111100000000111011010101100010110
01100001100001101011000011100010110111111100111
10010010101101100110101000001000111101000001101
11111111100011001011100100101100111111001001000
101010011100100010101010011001001101100110

Message Digest SHA3-384
a5 41 41 54 39 83 e2 bb 15 e9 eb 02 59 18 2c c3
d5 f1 81 3c 52 2e 22 cc 82 3f bd d2 12 0e a0 73
62 4a b0 ff 8f 84 39 26 51 ec 78 97 75 7d 6b af

☐ SHA3-224
☐ SHA3-256
☒ SHA3-384
☐ SHA3-512

Figure 7 SHA3-384 n = 512 Bits

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Hex String n

Len = 0
Msg Bits =
Message Digest SHA3-512
a6 9f 73 cc a2 3a 9a c5 c8 b5 67 dc 18 5a 75 6e
97 c9 82 16 4f e2 58 59 e0 d1 dc c1 47 5c 80 a6
15 b2 12 3a f1 f5 f9 4c 11 e3 e9 40 2c 3a c5 58
f5 00 19 9d 95 b6 d3 e3 01 75 85 86 28 1d cd 26

Len = 1
Msg Bits = 1
Message Digest SHA3-512
05 80 22 00 15 f6 b2 56 32 8e fe 4d 4a f7 eb d8
51 87 c4 2f e5 2f dc 82 ec c6 ff 5c ee 7c 84 73
f4 a1 91 10 73 ab 75 98 eb 41 c6 09 5e cf a0 5c
1e 14 8f 72 6c 3d 47 4d 66 d1 e4 bc c1 91 92 3c

Len = 8
Msg Bits = 11100100
Message Digest SHA3-512
d4 05 d9 a1 4f 2c 95 57 a0 4e 9c 1e 4e f9 ed ab
9d a0 a2 0d d1 de aa 8b 83 2f 79 94 47 18 75 d5
1a c2 26 7f 7d ef c3 7c 75 70 1f 45 da bb 4c 6a
5e 34 46 d8 b7 cc dd 29 26 63 2a b9 48 5e 73 02

☐ SHA3-224

☐ SHA3-256

☐ SHA3-384

☒ SHA3-512

Hash

Clear

Figure 8 SHA3-512 $n = 0, 1$, and 8 Bits

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Hex String eb56d01e2e81afa38128215c629cbcd73c6d6bb43ce8ce4f60 n 512

Len = 512

Msg Bits =

11001000001101001010101111110100011100011001101
10010110100000100000010101110100001110101101100
10011011010011101011101101110101111100111101000
10100001100011001110000100000111010110100001001
11100100110001110101111101001101111100111000101
11011011110000011111100101111101000001010101100
00100101010010010100000010111111010111011010100
00010110111100001110100100000011111010111000101
10000001000101001000010000111010010001100011100
10111110111101011001111001011011011010110001011
010011110000010111011100111111001000000110

Message Digest SHA3-512

e2 b7 d7 b6 5a 32 e2 ed 9d 97 5f ae 23 e8 5a 32
3e ca 02 6d 23 b0 b8 be 64 40 07 f1 e1 36 16 a3
0a 81 3b 73 e5 db 66 0f 38 03 eb 17 0e c4 de 4d
8e cc 11 0c cc 72 7a 49 33 94 d5 73 15 88 ba e7

☐ SHA3-224

☐ SHA3-256

☐ SHA3-384

☒ SHA3-512

Hash

Clear

Figure 9 SHA3-512 n = 512 Bits