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SHA-224 Test Data

#1) 1 byte 0xff
e33f9d75 e6ae1369 dbabf81b 96b4591a e46bba30 b591a6b6 c62542b5

#2) 4 bytes 0xe5e09924
fd19e746 90d29146 7ce59f07 7df31163 8f1c3a46 e510d0e4 9a67062d

#3) 56 bytes of zeros
5c3e25b6 9d0ea26f 260cfae8 7e23759e 1eca9d1e cc9fbf3c 62266804

#4) 1000 bytes of 0x51 'Q'
3706197f 66890a41 779dc879 1670522e 136fafa2 48746857 15bd0a8a

#5) 1000 bytes of 0x41 'A'
a8d0c66b 5c6fdfd8 36eb3c6d 04d32dfe 66c3b1f1 68b488bf 4c9c66ce

#6) 1005 bytes of 0x99
cb00ecd0 3788bf6c 0908401e 0eb053ac 61f35e7e 20a2cfd7 bd96d640

#7) 1000000 bytes of zeros
3a5d74b6 8f14f3a4 b2be9289 b8d37067 2d0b3d2f 53bc303c 59032df3

#8) 0x20000000 (536870912) bytes of 0x41 'A'
c4250083 cf8230bf 21065b30 14baaaf9 f76fecef c21f91cf 237dedc9

#9) 0x41000000 (1090519040) bytes of zeros
014674ab c5cb9801 99935695 af22fab6 83748f42 61d4c649 2b77c543

#10) 0x6000003f (1610612799) bytes of 0x84
a654b50b 767a8323 c5b519f4 67d86698 37142881 dc7ad368 a7d5ef8f

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SHA-256 Test Data

#1) 1 byte 0xbd
68325720 aabd7c82 f30f554b 313d0570 c95accbb 7dc4b5aa e11204c0 8ffe732b

#2) 4 bytes 0xc98c8e55
7abc22c0 ae5af26c e93dbb94 433a0e0b 2e119d01 4f8e7f65 bd56c61c cccd9504

#3) 55 bytes of zeros
02779466 cdec1638 11d07881 5c633f21 90141308 1449002f 24aa3e80 f0b88ef7

#4) 56 bytes of zeros
d4817aa5 497628e7 c77e6b60 6107042b bba31308 88c5f47a 375e6179 be789fbb

#5) 57 bytes of zeros
65a16cb7 861335d5 ace3c607 18b5052e 44660726 da4cd13b b745381b 235a1785

#6) 64 bytes of zeros
f5a5fd42 d16a2030 2798ef6e d309979b 43003d23 20d9f0e8 ea9831a9 2759fb4b

#7) 1000 bytes of zeros
541b3e9d aa09b20b f85fa273 e5cbd3e8 0185aa4e c298e765 db87742b 70138a53

#8) 1000 bytes of 0x41 'A'
c2e68682 3489ced2 017f6059 b8b23931 8b6364f6 dcd835d0 a519105a 1eadd6e4

#9) 1005 bytes of 0x55 'U'
f4d62dde c0f3dd90 ea1380fa 16a5ff8d c4c54b21 740650f2 4afc4120 903552b0

#10) 1000000 bytes of zeros
d29751f2 649b32ff 572b5e0a 9f541ea6 60a50f94 ff0beedf b0b692b9 24cc8025

#11) 0x20000000 (536870912) bytes of 0x5a 'Z'
15a1868c 12cc5395 1e182344 277447cd 0979536b adcc512a d24c67e9 b2d4f3dd

#12) 0x41000000 (1090519040) bytes of zeros
461c19a9 3bd4344f 9215f5ec 64357090 342bc66b 15a14831 7d276e31 cbc20b53

#13) 0x6000003e (1610612798) bytes of 0x42 'B'
c23ce8a7 895f4b21 ec0daf37 920ac0a2 62a22004 5a03eb2d fed48ef9 b05aabea
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SHA-384 Test Data

#1) 0 byte (null message)
38b060a751ac9638 4cd9327eb1b1e36a 21fdb71114be0743 4c0cc7bf63f6e1da
274edebfe76f65fb d51ad2f14898b95b

#2) 111 bytes of zeros
435770712c611be7 293a66dd0dc8d145 0dc7ff7337bfe115 bf058ef2eb9bed09
cee85c26963a5bcc 0905dc2df7cc6a76

#3) 112 bytes of zeros
3e0cbf3aee0e3aa7 0415beae1bd12dd7 db821efa446440f1 2132edffce76f635
e53526a111491e75 ee8e27b9700eec20

#4) 113 bytes of zeros
6be9af2cf3cd5dd1 2c8d9399ec2b34e6 6034fbd699d4e022 1d39074172a38065
6089caafe8f39963 f94cc7c0a07e3d21

#5) 122 bytes of zeros
12a72ae4972776b0 db7d73d160a15ef0 d19645ec96c7f816 411ab780c794aa49
6a22909d941fe671 ed3f3caee900bdd5

#6) 1000 bytes of zeros
aae017d4ae5b6346 dd60a19d52130fb5 5194b6327dd40b89 c11efc8222292de8
1e1a23c9b59f9f58 b7f6ad463fa108ca

#7) 1000 bytes of 0x41 'A'
7df01148677b7f18 617eee3a23104f0e ed6bb8c90a6046f7 15c9445ff43c30d6
9e9e7082de39c345 2fd1d3afd9ba0689

#8) 1005 bytes of 0x55 'U'
1bb8e256da4a0d1e 87453528254f223b 4cb7e49c4420dbfa 766bba4adba44eec
a392ff6a9f565bc3 47158cc970ce44ec

#9) 1000000 bytes of zeros
8a1979f9049b3fff 15ea3a43a4cf84c6 34fd14acad1c333f ecb72c588b68868b
66a994386dc0cd16 87b9ee2e34983b81

#10) 0x20000000 (536870912) bytes of 0x5a 'Z'
18aded227cc6b562 cc7fb259e8f40454 9e52914531aa1c5d 85167897c779cc4b
25d0425fd1590e40 bd763ec3f4311c1a

#11) 0x41000000 (1090519040) bytes of zeros
83ab05ca483abe3f aa597ad524d31291 ae827c5be2b3efcb 6391bfed31ccd937
b6135e0378c6c7f5 98857a7c516f207a

#12) 0x6000003e (1610612798) bytes of 0x42 'B'
cf852304f8d80209 351b37ce69ca7dcf 34972b4edb781702 8ec55ab67ad3bc96
eecb8241734258a8 5d2afce65d4571e2


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SHA-512 Test Data

#1) 0 byte (null message)
cf83e1357eefb8bd f1542850d66d8007 d620e4050b5715dc 83f4a921d36ce9ce
47d0d13c5d85f2b0 ff8318d2877eec2f 63b931bd47417a81 a538327af927da3e

#2) 111 bytes of zeros
77ddd3a542e530fd 047b8977c657ba6c e72f1492e360b2b2 212cd264e75ec038
82e4ff0525517ab4 207d14c70c2259ba 88d4d335ee0e7e20 543d22102ab1788c

#3) 112 bytes of zeros
2be2e788c8a8adea a9c89a7f78904cac ea6e39297d75e057 3a73c756234534d6
627ab4156b48a665 7b29ab8beb733340 40ad39ead81446bb 09c70704ec707952

#4) 113 bytes of zeros
0e67910bcf0f9ccd e5464c63b9c850a1 2a759227d16b040d 98986d54253f9f34
322318e56b8feb86 c5fb2270ed87f312 52f7f68493ee7597 43909bd75e4bb544
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#5) 122 bytes of zeros
4f3f095d015be4a7 a7cc0b8c04da4aa0 9e74351e3a97651f 744c23716ebd9b3e
822e5077a01baa5c c0ed45b9249e88ab 343d4333539df21e d229da6f4a514e0f

#6) 1000 bytes of zeros
ca3dff61bb23477a a6087b27508264a6 f9126ee3a004f53c b8db942ed345f2f2
d229b4b59c859220 a1cf1913f34248e3 803bab650e849a3d 9a709edc09ae4a76

#7) 1000 bytes of 0x41 'A'
329c52ac62d1fe73 1151f2b895a00475 445ef74f50b979c6 f7bb7cae349328c1
d4cb4f7261a0ab43 f936a24b000651d4 a824fcdd577f211a ef8f806b16afe8af

#8) 1005 bytes of 0x55 'U'
59f5e54fe299c6a8 764c6b199e44924a 37f59e2b56c3ebad 939b7289210dc8e4
c21b9720165b0f4d 4374c90f1bf4fb4a 5ace17a116179801 5052893a48c3d161

#9) 1000000 bytes of zeros
ce044bc9fd43269d 5bbc946cbebc3bb7 11341115cc4abdf2 edbc3ff2c57ad4b1
5deb699bda257fea 5aef9c6e55fcf4cf 9dc25a8c3ce25f2e fe90908379bff7ed

#10) 0x20000000 (536870912) bytes of 0x5a 'Z'
da172279f3ebbda9 5f6b6e1e5f0ebec6 82c25d3d93561a16 24c2fa9009d64c7e
9923f3b46bcaf11d 39a531f43297992b a4155c7e827bd0f1 e194ae7ed6de4cac

#11) 0x41000000 (1090519040) bytes of zeros
14b1be901cb43549 b4d831e61e5f9df1 c791c85b50e85f9d 6bc64135804ad43c
e8402750edbe4e5c 0fc170b99cf78b9f 4ecb9c7e02a15791 1d1bd1832d76784f

#12) 0x6000003e (1610612798) bytes of 0x42 'B'
fd05e13eb771f051 90bd97d62647157e a8f1f6949a52bb6d aaedbad5f578ec59
b1b8d6c4a7ecb2fe ca6892b4dc138771 670a0f3bd577eea3 26aed40ab7dd58b1
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