|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| M and N | 10 | 20 | 40 | 80 | 160 |
| Black-Scholes Value | 0.096277223 | 0.096277223 | 0.096277223 | 0.096277223 | 0.096277223 |
| Explicit Value | -1.173891084 | 0.092097902 | 0.116482744 | -1.83E+24 | -6.19E+106 |
| Implicit Value | -0.994713585 | 0.12631844 | 0.10862036 | 0.10134577 | 0.098250735 |
| Crank-Nicolson Value | -1.078078304 | 0.10985438 | 0.099344088 | 0.096526723 | 0.095810534 |
| Gaussian Value | -0.098002646 | 0.028818244 | 0.026318156 | 0.025610725 | 0.02552854 |
| Multi-Quadric Value | -0.097506285 | 0.028776739 | 0.026311437 | 0.025609278 | 0.025528158 |
| Explicit Error | 13.19282249 | 0.043409239 | 0.20986814 | 1.90E+25 | 6.43E+107 |
| Implicit Error | 11.33176445 | 0.312028291 | 0.128204134 | 0.052645347 | 0.020498225 |
| Crank-Nicolson Error | 12.1976465 | 0.141021489 | 0.031854527 | 0.002591479 | 0.004847336 |
| Gaussian Error | 2.017921406 | 0.700674327 | 0.726641923 | 0.733989779 | 0.734843409 |
| Multi-Quadric Error | 2.012765868 | 0.701105435 | 0.726711717 | 0.734004807 | 0.734847376 |

OTM Call

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| --- | --- | --- | --- | --- | --- |
| M and N | 10 | 20 | 40 | 80 | 160 |
| Black-Scholes Value | 13.02028127 | 13.02028127 | 13.02028127 | 13.02028127 | 13.02028127 |
| Explicit Value | 12.53782116 | 13.08469253 | 1.99045E+15 | 6.23E+58 | 2.86E+169 |
| Implicit Value | 12.11279399 | 12.76861677 | 12.93262562 | 12.98310191 | 13.00089415 |
| Crank-Nicolson Value | 12.33027453 | 12.85725897 | 12.97533525 | 13.00425829 | 13.01144296 |
| Gaussian Value | 0.632621373 | 1.228494968 | 1.449987194 | 1.542280711 | 1.586461567 |
| Multi-Quadric Value | 0.626066846 | 1.227168234 | 1.449678408 | 1.542203643 | 1.586440005 |
| Explicit Error | 0.037054507 | 0.004946995 | 1.52873E+14 | 4.79E+57 | 2.20E+168 |
| Implicit Error | 0.069697978 | 0.019328653 | 0.00673224 | 0.002855496 | 0.001488994 |
| Crank-Nicolson Error | 0.052994764 | 0.012520644 | 0.003452001 | 0.001230617 | 0.000678811 |
| Gaussian Error | 0.951412619 | 0.905647586 | 0.888636262 | 0.881547819 | 0.878154586 |
| Multi-Quadric Error | 0.951916028 | 0.905749484 | 0.888659978 | 0.881553738 | 0.878156242 |

ATM Call

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| --- | --- | --- | --- | --- | --- |
| M and N | 10 | 20 | 40 | 80 | 160 |
| Black-Scholes Value | 53.05768239 | 53.05768239 | 53.05768239 | 53.05768239 | 53.05768239 |
| Explicit Value | 52.74993809 | -11160.6458 | 5.97E+25 | 3.93E+80 | -1.53E+212 |
| Implicit Value | 52.82800739 | 53.04763063 | 53.0576878 | 53.05882766 | 53.06199934 |
| Crank-Nicolson Value | 52.78989086 | 53.03752417 | 53.05330127 | 53.05673887 | 53.06098703 |
| Gaussian Value | 11.75877626 | 14.28298609 | 16.54235765 | 17.68424358 | 18.11845345 |
| Multi-Quadric Value | 11.70851637 | 14.27147024 | 16.539314 | 17.68344851 | 18.11822781 |
| Explicit Error | 0.005800184 | 211.3492897 | 1.13E+24 | 7.41E+78 | 2.89E+210 |
| Implicit Error | 0.004328779 | 0.00018945 | 1.02E-07 | 2.16E-05 | 8.14E-05 |
| Crank-Nicolson Error | 0.005047177 | 0.00037993 | 8.26E-05 | 1.78E-05 | 6.23E-05 |
| Gaussian Error | 0.778377499 | 0.730802676 | 0.68821937 | 0.666697775 | 0.658514043 |
| Multi-Quadric Error | 0.779324768 | 0.73101972 | 0.688276735 | 0.66671276 | 0.658518296 |

ITM Call

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| --- | --- | --- | --- | --- | --- |
| M and N | 10 | 20 | 40 | 80 | 160 |
| Black-Scholes Value | 46.20928601 | 46.20928601 | 46.20928601 | 46.20928601 | 46.20928601 |
| Explicit Value | 45.15974623 | 46.74706384 | 46.55534986 | -2.03E+24 | -8.02E+104 |
| Implicit Value | 45.4565809 | 46.82308418 | 46.60289866 | 46.52689276 | 46.50237337 |
| Crank-Nicolson Value | 45.29029743 | 46.75816824 | 46.56655653 | 46.5082702 | 46.49300849 |
| Gaussian Value | 53.88035921 | 53.989578 | 53.83882089 | 53.76613879 | 53.73048199 |
| Multi-Quadric Value | 53.82223787 | 53.97902034 | 53.83611732 | 53.76545601 | 53.73028877 |
| Explicit Error | 0.022712746 | 0.011637874 | 0.007489054 | 4.39E+22 | 1.73E+103 |
| Implicit Error | 0.016289044 | 0.013283005 | 0.008518042 | 0.006873224 | 0.006342607 |
| Crank-Nicolson Error | 0.01988753 | 0.01187818 | 0.007731574 | 0.006470219 | 0.006139945 |
| Gaussian Error | 0.166007179 | 0.168370747 | 0.165108262 | 0.163535372 | 0.162763735 |
| Multi-Quadric Error | 0.164749394 | 0.168142272 | 0.165049754 | 0.163520596 | 0.162759554 |

ITM Put

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| --- | --- | --- | --- | --- | --- |
| M and N | 10 | 20 | 40 | 80 | 160 |
| Black-Scholes Value | 10.12335639 | 10.12335639 | 10.12335639 | 10.12335639 | 10.12335639 |
| Explicit Value | 9.604680603 | 10.02927887 | -45267963.49 | -5.49E+45 | -1.05E+146 |
| Implicit Value | 9.209068307 | 9.863217008 | 10.02845945 | 10.0791835 | 10.09685329 |
| Crank-Nicolson Value | 9.415013884 | 9.948239425 | 10.06979738 | 10.09974207 | 10.10712011 |
| Gaussian Value | 31.37460022 | 29.88064779 | 29.12281237 | 28.74064824 | 28.55121074 |
| Multi-Quadric Value | 31.30911569 | 29.86392679 | 29.11867274 | 28.73962276 | 28.55092284 |
| Explicit Error | 0.051235555 | 0.009293116 | 4471636.864 | 5.42E+44 | 1.04E+145 |
| Implicit Error | 0.090314718 | 0.02569695 | 0.009374058 | 0.004363463 | 0.002618015 |
| Crank-Nicolson Error | 0.069971112 | 0.017298311 | 0.005290637 | 0.002332657 | 0.001603843 |
| Gaussian Error | 2.099229052 | 1.951654239 | 1.876794143 | 1.83904341 | 1.820330495 |
| Multi-Quadric Error | 2.092760394 | 1.950002514 | 1.876385224 | 1.838942111 | 1.820302057 |

ATM Put

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| --- | --- | --- | --- | --- | --- |
| M and N | 10 | 20 | 40 | 80 | 160 |
| Black-Scholes Value | 1.150823845 | 1.150823845 | 1.150823845 | 1.150823845 | 1.150823845 |
| Explicit Value | 0.827640898 | 1.157426755 | -1.54969E+14 | -2.23E+57 | 6.61E+166 |
| Implicit Value | 0.925700547 | 1.142614656 | 1.150462365 | 1.150416194 | 1.152984879 |
| Crank-Nicolson Value | 0.878634137 | 1.128022774 | 1.143781654 | 1.147169898 | 1.151392055 |
| Gaussian Value | 10.27301009 | 8.376228741 | 7.824218302 | 7.541495427 | 7.337191625 |
| Multi-Quadric Value | 10.2433112 | 8.371130165 | 7.823113701 | 7.541234882 | 7.337120174 |
| Explicit Error | 0.280827469 | 0.005737551 | 1.34659E+14 | 1.94E+57 | 5.74E+166 |
| Implicit Error | 0.19561925 | 0.007133315 | 0.000314105 | 0.000354226 | 0.001877814 |
| Crank-Nicolson Error | 0.236517265 | 0.019812825 | 0.006119261 | 0.003175071 | 0.000493742 |
| Gaussian Error | 7.926657309 | 6.278462969 | 5.798797518 | 5.553127534 | 5.375599233 |
| Multi-Quadric Error | 7.900850672 | 6.274032598 | 5.797837682 | 5.552901135 | 5.375537146 |

OTM Put