

File - lab15

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/Users/rekerok/Proga/Numerical-methods/venv/bin/python /Users/rekerok/Proga/Numerical-methods/Lab15/lab15.py
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Численное решение с помощью метода R - K,  $r = 1$

Вычисления для задачи Коши  $z1(x)$

$x1\_i = 0.5$   $z1\_xi = 1$   $s1\_xi = 0.5$

$x1\_i = 0.60000000000000000001$   $z1\_xi = 1.05$   $s1\_xi = 1.6777777777777778$

$x1\_i = 0.70000000000000000001$   $z1\_xi = 1.2177777777777778$   $s1\_xi = 3.2150031387319524$

$x1\_i = 0.8$   $z1\_xi = 1.5392780916509732$   $s1\_xi = 5.129202416337397$

$x1\_i = 0.9$   $z1\_xi = 2.052198333284713$   $s1\_xi = 7.444726973702196$

$x1\_i = 1.0$   $z1\_xi = 2.7966710306549327$   $s1\_xi = 10.191238622260176$

Вычисления для задачи Коши  $z2(x)$

$x2\_i = 0.5$   $z2\_xi = 2$   $s2\_xi = 0.5$

$x2\_i = 0.60000000000000000001$   $z2\_xi = 2.05$   $s2\_xi = 1.8555555555555556$

$x2\_i = 0.70000000000000000001$   $z2\_xi = 2.2355555555555555$   $s2\_xi = 3.621531701192718$

$x2\_i = 0.8$   $z2\_xi = 2.5977087256748272$   $s2\_xi = 5.8153804348413285$

$x2\_i = 0.9$   $z2\_xi = 3.17924676915896$   $s2\_xi = 8.462817774714514$

$x2\_i = 1.0$   $z2\_xi = 4.025528546630412$   $s2\_xi = 11.596005764547169$

$\delta = 2.6336246582624714$

$c = -4.551867182480023$

Вычисления для  $y(x)$

$x\_i = 0.5$   $y\_xi = -3.5518671824800228$

$x\_i = 0.60000000000000000001$   $y\_xi = -3.501867182480022$

$x\_i = 0.70000000000000000001$   $y\_xi = -3.4150114879463347$

$x\_i = 0.8$   $y\_xi = -3.278557576293732$

$x\_i = 0.9$   $y\_xi = -3.0779764550367137$

$x\_i = 1.0$   $y\_xi = -2.7969251682577703$

Проверка:

$|0 * -3.5518671824800228 + 1 * 0.500000000000000071 - 0.5| = 7.105427357601002e-15$

$|1 * -2.7969251682577703 + 1 * 2.810512867789434 - 1| = 0.9864123004683361$

Process finished with exit code 0