

اجرای برنامه برای 25 عکس:

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in generation 1 best fitness is: 62.9067
The answer is :[[103, 250, 213], [167, 79, 122], [183, 12, 97], [198, 199, 17
5]]
in generation 2 best fitness is: 48.1621
The answer is :[[87, 111, 27], [99, 235, 208], [125, 111, 147], [150, 136, 12
7]]
in generation 3 best fitness is: 37.8939
The answer is :[[30, 142, 68], [90, 88, 114], [122, 115, 151], [180, 183, 141
]]
in generation 5 best fitness is: 21.1334
The answer is :[[79, 70, 152], [142, 162, 163], [148, 134, 128], [157, 168, 1
53]]
in generation 7 best fitness is: 21.1066
The answer is :[[79, 70, 152], [113, 93, 92], [148, 134, 128], [157, 168, 153
]]
in generation 8 best fitness is: 18.2729
The answer is :[[86, 67, 134], [135, 118, 150], [137, 131, 123], [165, 161, 1
54]]
in generation 9 best fitness is: 17.1043
The answer is :[[84, 74, 138], [115, 120, 125], [141, 122, 129], [163, 163, 1
57]]
in generation 10 best fitness is: 16.4155
The answer is :[[82, 71, 138], [129, 110, 120], [143, 125, 130], [161, 163, 1
57]]
in generation 19 best fitness is: 16.4071
The answer is :[[82, 70, 136], [128, 113, 123], [142, 124, 128], [161, 162, 1
57]]
in generation 20 best fitness is: 16.3855
The answer is :[[82, 71, 137], [129, 110, 120], [142, 124, 130], [161, 163, 1
57]]
PSNR :32.18591065090614
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in generation 1 best fitness is: 54.8689
The answer is :[[7, 59, 245], [60, 247, 199], [153, 134, 121], [232, 108, 233
]]
in generation 3 best fitness is: 39.627
The answer is :[[72, 129, 184], [156, 163, 160], [170, 73, 119], [186, 97, 14
1]]
in generation 4 best fitness is: 32.0761
The answer is :[[59, 87, 172], [133, 86, 101], [164, 164, 161], [212, 140, 16
9]]
in generation 5 best fitness is: 31.8942
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The answer is :[[60, 49, 123], [135, 152, 62], [155, 141, 142], [200, 146, 174]]

in generation 7 best fitness is: 23.7231

The answer is :[[36, 74, 118], [75, 59, 139], [138, 127, 145], [183, 161, 167]]

in generation 9 best fitness is: 20.9627

The answer is :[[63, 49, 136], [139, 134, 135], [178, 158, 164], [221, 176, 149]]

in generation 17 best fitness is: **20.9462**

The answer is :[[34, 82, 102], [63, 52, 133], [133, 126, 135], [174, 156, 160]]

PSNR :30.96044400417351

in generation 1 best fitness is: 55.1131

The answer is :[[64, 69, 131], [76, 86, 108], [111, 151, 128], [210, 76, 61]]

in generation 2 best fitness is: 40.0029

The answer is :[[62, 161, 135], [86, 97, 130], [149, 136, 163], [193, 134, 41]]

in generation 3 best fitness is: 36.6693

The answer is :[[74, 187, 146], [104, 105, 135], [167, 153, 140], [193, 150, 56]]

in generation 5 best fitness is: 26.2764

The answer is :[[53, 86, 163], [115, 106, 131], [156, 153, 157], [167, 145, 191]]

in generation 6 best fitness is: 26.2045

The answer is :[[61, 85, 142], [142, 123, 133], [142, 165, 174], [177, 174, 161]]

in generation 8 best fitness is: 23.5397

The answer is :[[104, 94, 57], [134, 111, 136], [166, 164, 162], [200, 166, 96]]

in generation 9 best fitness is: 21.7574

The answer is :[[55, 89, 159], [134, 111, 136], [151, 161, 198], [166, 164, 162]]

in generation 10 best fitness is: 20.744

The answer is :[[60, 91, 155], [99, 96, 77], [136, 117, 132], [159, 157, 159]]

in generation 13 best fitness is: 19.7828

The answer is :[[79, 96, 114], [134, 106, 128], [157, 160, 161], [202, 163, 112]]

in generation 14 best fitness is: 19.1554

The answer is :[[60, 92, 133], [88, 96, 115], [136, 115, 131], [158, 159, 161]]

in generation 17 best fitness is: **18.7436**

The answer is :[[77, 92, 112], [132, 108, 126], [159, 159, 160], [185, 162, 131]]

PSNR :31.40919552133489

in genertion 1 best fitness is: 60.595

The answer is :[[57, 136, 207], [122, 113, 108], [130, 141, 243], [165, 64, 96]]

in genertion 2 best fitness is: 54.3375

The answer is :[[82, 111, 128], [116, 128, 114], [187, 215, 83], [192, 212, 190]]

in genertion 3 best fitness is: 50.18

The answer is :[[112, 150, 111], [182, 149, 172], [203, 178, 152], [237, 102, 130]]

in genertion 4 best fitness is: 45.652

The answer is :[[58, 75, 130], [105, 107, 125], [120, 103, 73], [201, 174, 174]]

in genertion 5 best fitness is: 26.7887

The answer is :[[123, 146, 197], [141, 127, 130], [158, 159, 152], [195, 210, 125]]

in genertion 7 best fitness is: 23.4796

The answer is :[[84, 88, 116], [131, 132, 123], [153, 148, 158], [200, 161, 121]]

in genertion 8 best fitness is: 21.6078

The answer is :[[59, 106, 140], [64, 67, 133], [133, 115, 140], [149, 148, 157]]

in genertion 9 best fitness is: 17.5043

The answer is :[[63, 77, 133], [105, 121, 163], [136, 120, 126], [158, 153, 154]]

in genertion 14 best fitness is: 17.4894

The answer is :[[66, 70, 145], [113, 125, 170], [136, 120, 126], [157, 154, 153]]

in genertion 15 best fitness is: **17.1856**

The answer is :[[66, 73, 142], [111, 125, 172], [136, 120, 128], [157, 155, 154]]

PSNR :31.324549018594425

in genertion 1 best fitness is: 53.6967

The answer is :[[69, 237, 79], [100, 99, 90], [181, 130, 176], [216, 239, 187]]

in genertion 2 best fitness is: 49.657

The answer is :[[72, 45, 143], [122, 136, 98], [139, 64, 68], [223, 119, 85]]

in genertion 4 best fitness is: 29.7734

The answer is :[[82, 59, 113], [134, 136, 127], [155, 198, 155], [208, 130, 161]]

in generation 6 best fitness is: 26.3295
The answer is :[[68, 96, 93], [137, 141, 133], [153, 150, 143], [201, 126, 168]]
in generation 7 best fitness is: 22.0685
The answer is :[[82, 69, 107], [133, 133, 130], [157, 168, 157], [219, 126, 165]]
in generation 9 best fitness is: 20.59
The answer is :[[89, 65, 103], [136, 123, 133], [160, 168, 158], [229, 125, 172]]
in generation 10 best fitness is: 19.8859
The answer is :[[28, 131, 83], [87, 67, 101], [137, 122, 134], [159, 166, 155]]
in generation 13 best fitness is: 19.4511
The answer is :[[31, 131, 87], [83, 68, 103], [135, 121, 132], [157, 166, 154]]
in generation 14 best fitness is: 19.3456
The answer is :[[30, 132, 92], [88, 75, 102], [136, 122, 131], [158, 164, 153]]
in generation 15 best fitness is: 18.8924
The answer is :[[85, 72, 103], [134, 123, 129], [157, 164, 154], [223, 122, 160]]
in generation 17 best fitness is: 18.6786
The answer is :[[84, 71, 103], [134, 122, 129], [156, 164, 153], [222, 122, 161]]
in generation 20 best fitness is: **18.5292**
The answer is :[[83, 70, 102], [134, 121, 129], [156, 164, 153], [222, 122, 164]]
PSNR :30.54198665670027

in generation 1 best fitness is: 53.9901
The answer is :[[123, 101, 150], [145, 106, 142], [219, 199, 139], [226, 220, 185]]
in generation 2 best fitness is: 38.599
The answer is :[[46, 83, 131], [97, 239, 146], [132, 161, 139], [158, 145, 85]]
in generation 3 best fitness is: 31.9615
The answer is :[[56, 64, 78], [87, 72, 79], [157, 155, 133], [234, 140, 106]]
in generation 4 best fitness is: 30.2627
The answer is :[[52, 55, 162], [115, 106, 92], [145, 166, 164], [205, 197, 129]]
in generation 5 best fitness is: 24.7967
The answer is :[[35, 86, 87], [38, 51, 112], [114, 153, 109], [146, 156, 160]]
in generation 6 best fitness is: 22.9683

The answer is :[[70, 99, 128], [133, 142, 139], [158, 163, 153], [215, 152, 106]]

in generation 7 best fitness is: 18.585

The answer is :[[47, 76, 127], [58, 65, 136], [119, 117, 116], [149, 156, 153]]

in generation 8 best fitness is: 15.964

The answer is :[[40, 84, 121], [60, 56, 119], [131, 118, 131], [147, 156, 155]]

in generation 14 best fitness is: 15.6921

The answer is :[[40, 67, 115], [58, 87, 103], [135, 116, 133], [153, 158, 158]]

in generation 15 best fitness is: 14.8263

The answer is :[[49, 62, 112], [133, 118, 133], [152, 158, 157], [202, 162, 144]]

in generation 17 best fitness is: **14.3795**

The answer is :[[46, 69, 115], [66, 87, 115], [129, 119, 126], [155, 158, 156]]

PSNR :32.65725096280736

in generation 1 best fitness is: 47.8357

The answer is :[[35, 229, 124], [88, 247, 132], [129, 127, 163], [162, 183, 163]]

in generation 5 best fitness is: 40.404

The answer is :[[43, 80, 72], [82, 66, 64], [103, 78, 138], [157, 164, 161]]

in generation 6 best fitness is: 34.1637

The answer is :[[68, 82, 137], [123, 126, 142], [157, 179, 173], [178, 157, 170]]

in generation 7 best fitness is: 27.455

The answer is :[[65, 94, 112], [66, 56, 134], [140, 113, 120], [163, 169, 178]]

in generation 8 best fitness is: 27.416

The answer is :[[65, 47, 140], [142, 114, 115], [166, 166, 184], [197, 149, 137]]

in generation 9 best fitness is: 25.6949

The answer is :[[74, 63, 135], [140, 125, 132], [166, 165, 172], [187, 165, 141]]

in generation 12 best fitness is: 25.0018

The answer is :[[65, 87, 115], [76, 65, 133], [143, 120, 128], [167, 168, 173]]

in generation 15 best fitness is: **24.9947**

The answer is :[[76, 65, 133], [143, 120, 128], [167, 168, 173], [190, 168, 140]]

PSNR :28.607298190725633

in generation 1 best fitness is: 53.5009
The answer is :[[136, 114, 94], [140, 79, 111], [158, 172, 221], [251, 62, 243]]

in generation 2 best fitness is: 52.9469
The answer is :[[100, 145, 136], [144, 84, 71], [156, 90, 161], [179, 183, 140]]

in generation 3 best fitness is: 37.5671
The answer is :[[114, 122, 143], [122, 119, 111], [154, 182, 214], [175, 175, 169]]

in generation 4 best fitness is: 34.167
The answer is :[[74, 72, 166], [93, 162, 76], [118, 113, 128], [185, 182, 189]]

in generation 5 best fitness is: 25.8152
The answer is :[[88, 74, 142], [110, 159, 72], [139, 115, 145], [186, 179, 178]]

in generation 9 best fitness is: 22.5037
The answer is :[[79, 77, 103], [138, 129, 129], [150, 126, 141], [182, 170, 177]]

in generation 10 best fitness is: 21.1548
The answer is :[[71, 72, 121], [142, 122, 136], [152, 112, 163], [180, 174, 182]]

in generation 16 best fitness is: 20.857
The answer is :[[73, 73, 124], [142, 123, 132], [156, 117, 167], [179, 174, 183]]

in generation 17 best fitness is: 20.7678
The answer is :[[72, 73, 120], [142, 123, 134], [154, 115, 165], [178, 174, 182]]

in generation 18 best fitness is: 20.575
The answer is :[[73, 73, 120], [142, 123, 133], [153, 115, 166], [178, 174, 181]]

in generation 20 best fitness is: **20.5126**
The answer is :[[73, 73, 122], [142, 123, 132], [154, 115, 166], [178, 174, 181]]

PSNR :30.470602524552067

in generation 1 best fitness is: 55.3452
The answer is :[[18, 6, 153], [78, 198, 119], [141, 68, 90], [203, 165, 193]]

in generation 2 best fitness is: 50.3355
The answer is :[[77, 139, 121], [97, 214, 126], [154, 109, 163], [187, 133, 175]]

in generation 3 best fitness is: 39.2032
The answer is :[[137, 137, 148], [163, 117, 81], [166, 159, 176], [194, 118, 172]]

in generation 5 best fitness is: 37.2871

The answer is :[[97, 120, 110], [129, 132, 111], [165, 171, 157], [181, 188, 166]]
in generation 6 best fitness is: 30.8405
The answer is :[[53, 121, 101], [119, 128, 136], [142, 122, 148], [172, 173, 172]]
in generation 10 best fitness is: 24.549
The answer is :[[65, 79, 96], [124, 121, 122], [151, 126, 149], [170, 174, 170]]
in generation 12 best fitness is: 23.8091
The answer is :[[61, 79, 102], [129, 130, 127], [148, 122, 145], [174, 173, 171]]
in generation 14 best fitness is: 23.7295
The answer is :[[74, 87, 112], [136, 131, 126], [151, 122, 149], [177, 176, 170]]
in generation 17 best fitness is: 23.326
The answer is :[[63, 82, 106], [138, 125, 136], [144, 130, 140], [175, 173, 170]]
in generation 18 best fitness is: 23.1824
The answer is :[[63, 81, 106], [132, 122, 132], [144, 131, 140], [175, 173, 170]]
in generation 19 best fitness is: **23.0846**
The answer is :[[64, 82, 106], [134, 124, 131], [146, 127, 143], [174, 173, 170]]
PSNR :30.7238066664

in generation 1 best fitness is: 83.5707
The answer is :[[63, 61, 94], [72, 186, 200], [95, 119, 195], [105, 194, 227]]
in generation 2 best fitness is: 47.5491
The answer is :[[131, 147, 132], [157, 162, 191], [195, 181, 240], [227, 192, 195]]
in generation 3 best fitness is: 38.0289
The answer is :[[71, 106, 152], [149, 131, 111], [188, 149, 165], [245, 144, 189]]
in generation 4 best fitness is: 34.4715
The answer is :[[28, 84, 99], [82, 184, 160], [131, 124, 148], [186, 180, 163]]
in generation 5 best fitness is: 33.013
The answer is :[[79, 106, 122], [138, 83, 93], [152, 136, 143], [191, 164, 152]]
in generation 6 best fitness is: 32.0916
The answer is :[[20, 104, 71], [59, 80, 135], [132, 124, 148], [176, 154, 163]]
in generation 7 best fitness is: 31.6552

The answer is :[[28, 100, 76], [76, 91, 134], [138, 134, 124], [178, 161, 157]]
in generation 10 best fitness is: 28.8415
The answer is :[[52, 84, 129], [133, 101, 100], [156, 127, 142], [199, 165, 167]]
in generation 11 best fitness is: 27.3542
The answer is :[[60, 96, 134], [127, 139, 123], [149, 116, 130], [182, 173, 163]]
in generation 13 best fitness is: 27.1498
The answer is :[[60, 96, 128], [123, 112, 126], [151, 120, 132], [187, 169, 163]]
in generation 18 best fitness is: 27.0798
The answer is :[[64, 95, 129], [122, 117, 129], [150, 120, 131], [184, 169, 161]]
in generation 20 best fitness is: 27.0677
The answer is :[[63, 94, 129], [122, 121, 132], [150, 120, 131], [184, 169, 161]]
PSNR :29.377087647673036
in generation 1 best fitness is: 69.5916
The answer is :[[110, 192, 126], [126, 149, 180], [136, 212, 54], [241, 49, 157]]
in generation 2 best fitness is: 45.478
The answer is :[[56, 91, 111], [106, 213, 109], [145, 132, 196], [161, 132, 132]]
in generation 4 best fitness is: 34.6932
The answer is :[[122, 151, 167], [151, 101, 160], [176, 186, 180], [188, 127, 130]]
in generation 5 best fitness is: 28.6389
The answer is :[[80, 109, 107], [128, 112, 179], [170, 130, 152], [184, 175, 172]]
in generation 6 best fitness is: 25.0237
The answer is :[[59, 82, 110], [97, 111, 143], [142, 133, 119], [181, 178, 182]]
in generation 8 best fitness is: 21.7226
The answer is :[[104, 90, 158], [147, 133, 144], [176, 179, 178], [190, 123, 185]]
in generation 16 best fitness is: 21.6786
The answer is :[[65, 126, 73], [104, 92, 158], [148, 132, 142], [176, 179, 177]]
in generation 17 best fitness is: 21.5778
The answer is :[[104, 90, 158], [147, 132, 142], [176, 179, 177], [190, 126, 184]]
in generation 19 best fitness is: 21.5112

The answer is :[[65, 129, 72], [104, 90, 157], [147, 132, 142], [176, 178, 177]]

PSNR :30.33391671754189

in genertion 1 best fitness is: 53.5626

The answer is :[[29, 102, 112], [159, 187, 146], [221, 168, 84], [228, 163, 155]]

in genertion 2 best fitness is: 38.6478

The answer is :[[117, 16, 137], [125, 150, 251], [158, 156, 139], [238, 81, 123]]

in genertion 4 best fitness is: 27.9134

The answer is :[[112, 72, 116], [134, 132, 148], [169, 184, 159], [175, 75, 141]]

in genertion 6 best fitness is: 27.8989

The answer is :[[70, 66, 100], [129, 132, 131], [163, 175, 165], [208, 178, 173]]

in genertion 7 best fitness is: 26.171

The answer is :[[83, 147, 118], [119, 90, 128], [148, 123, 132], [180, 179, 162]]

in genertion 9 best fitness is: 24.0011

The answer is :[[82, 72, 89], [117, 119, 126], [153, 145, 142], [185, 180, 168]]

in genertion 10 best fitness is: 22.9763

The answer is :[[54, 91, 105], [84, 72, 126], [139, 134, 136], [172, 166, 167]]

in genertion 11 best fitness is: 22.7758

The answer is :[[67, 78, 92], [104, 106, 121], [147, 140, 140], [178, 178, 169]]

in genertion 17 best fitness is: **22.1249**

The answer is :[[94, 79, 125], [141, 136, 141], [175, 172, 167], [192, 147, 149]]

PSNR :30.309385174942882

in genertion 1 best fitness is: 70.2974

The answer is :[[45, 91, 93], [107, 29, 50], [170, 185, 254], [172, 112, 91]]

in genertion 2 best fitness is: 51.082

The answer is :[[104, 105, 137], [113, 244, 212], [115, 160, 151], [213, 167, 150]]

in genertion 3 best fitness is: 38.4552

The answer is :[[111, 103, 13], [144, 170, 185], [149, 108, 136], [221, 190, 233]]

in genertion 4 best fitness is: 31.5369

The answer is :[[31, 109, 130], [99, 77, 134], [126, 124, 107], [187, 176, 160]]

in generation 5 best fitness is: 28.1525
The answer is :[[24, 52, 157], [138, 127, 153], [165, 166, 155], [179, 174, 94]]
in generation 7 best fitness is: 21.3993
The answer is :[[58, 64, 136], [138, 123, 146], [171, 166, 172], [199, 165, 115]]
in generation 10 best fitness is: 20.3798
The answer is :[[43, 90, 143], [66, 64, 126], [131, 121, 120], [164, 170, 176]]
in generation 11 best fitness is: 17.4502
The answer is :[[65, 64, 127], [133, 121, 130], [168, 165, 168], [205, 162, 116]]
in generation 16 best fitness is: 17.3379
The answer is :[[48, 92, 139], [67, 64, 125], [133, 120, 127], [167, 164, 168]]
in generation 20 best fitness is: **17.1008**
The answer is :[[65, 62, 125], [133, 120, 127], [167, 164, 167], [206, 163, 116]]
PSNR :31.010237874530628

in generation 1 best fitness is: 47.9569
The answer is :[[86, 169, 161], [164, 213, 219], [166, 157, 150], [189, 173, 178]]
in generation 2 best fitness is: 35.6916
The answer is :[[80, 155, 155], [101, 38, 80], [161, 164, 145], [204, 162, 187]]
in generation 4 best fitness is: 33.1039
The answer is :[[77, 124, 121], [124, 68, 122], [159, 153, 147], [212, 118, 162]]
in generation 5 best fitness is: 33.0462
The answer is :[[82, 159, 157], [122, 96, 126], [162, 161, 146], [199, 165, 184]]
in generation 6 best fitness is: 30.3916
The answer is :[[58, 85, 107], [129, 114, 132], [165, 137, 111], [178, 142, 164]]
in generation 7 best fitness is: 21.8808
The answer is :[[59, 70, 111], [81, 129, 131], [133, 122, 139], [165, 154, 172]]
in generation 10 best fitness is: 21.1818
The answer is :[[62, 78, 112], [87, 137, 145], [132, 122, 140], [167, 159, 167]]
in generation 11 best fitness is: 19.7891
The answer is :[[63, 80, 109], [97, 134, 134], [136, 119, 129], [168, 159, 166]]

in generation 15 best fitness is: 18.5747
The answer is :[[63, 77, 108], [131, 127, 130], [143, 121, 128], [167, 159, 166]]
in generation 18 best fitness is: **18.5257**
The answer is :[[62, 77, 108], [120, 127, 127], [142, 121, 128], [166, 158, 165]]
PSNR :31.285381411197854

in generation 1 best fitness is: 44.9092
The answer is :[[139, 107, 192], [146, 123, 130], [180, 123, 246], [199, 68, 185]]
in generation 2 best fitness is: 38.4985
The answer is :[[105, 102, 199], [155, 151, 136], [214, 101, 173], [238, 157, 117]]
in generation 4 best fitness is: 35.0521
The answer is :[[96, 153, 146], [128, 121, 88], [161, 157, 139], [209, 119, 140]]
in generation 5 best fitness is: 31.959
The answer is :[[45, 121, 116], [109, 145, 145], [141, 106, 136], [171, 164, 166]]
in generation 7 best fitness is: 28.6778
The answer is :[[35, 127, 137], [130, 140, 139], [154, 151, 146], [163, 102, 63]]
in generation 9 best fitness is: 22.4762
The answer is :[[36, 101, 100], [103, 119, 142], [129, 112, 126], [164, 151, 148]]
in generation 11 best fitness is: 19.5701
The answer is :[[51, 70, 97], [119, 119, 94], [141, 117, 116], [163, 147, 156]]
in generation 13 best fitness is: 18.1519
The answer is :[[49, 76, 99], [136, 123, 119], [146, 135, 138], [161, 147, 153]]
in generation 14 best fitness is: 17.8699
The answer is :[[50, 73, 113], [138, 113, 128], [138, 150, 183], [162, 150, 155]]
in generation 15 best fitness is: 17.7963
The answer is :[[47, 78, 116], [136, 145, 153], [139, 118, 129], [162, 151, 155]]
in generation 16 best fitness is: 17.4693
The answer is :[[47, 77, 115], [137, 144, 155], [139, 117, 127], [161, 150, 154]]
in generation 17 best fitness is: **16.8129**
The answer is :[[48, 83, 116], [138, 116, 124], [144, 143, 139], [161, 152, 155]]

PSNR :32.918483708968836

in generation 1 best fitness is: 42.1653
The answer is :[[73, 45, 160], [124, 242, 180], [163, 181, 141], [176, 232, 166]]

in generation 4 best fitness is: 32.7821
The answer is :[[79, 86, 132], [113, 139, 104], [144, 149, 153], [164, 172, 129]]

in generation 5 best fitness is: 28.2922
The answer is :[[41, 82, 83], [146, 156, 160], [154, 147, 121], [166, 169, 174]]

in generation 6 best fitness is: 25.6579
The answer is :[[63, 42, 115], [130, 217, 157], [152, 154, 159], [188, 164, 129]]

in generation 7 best fitness is: 23.4729
The answer is :[[62, 78, 112], [112, 138, 126], [130, 123, 131], [175, 164, 155]]

in generation 9 best fitness is: 22.3039
The answer is :[[64, 76, 109], [121, 108, 119], [154, 159, 161], [178, 151, 141]]

in generation 11 best fitness is: 19.6306
The answer is :[[52, 62, 99], [126, 124, 122], [155, 160, 161], [178, 143, 137]]

in generation 13 best fitness is: 18.1706
The answer is :[[60, 56, 107], [128, 122, 126], [158, 156, 157], [178, 149, 135]]

in generation 16 best fitness is: 16.0127
The answer is :[[60, 60, 103], [93, 104, 128], [136, 121, 126], [166, 160, 158]]

in generation 19 best fitness is: 15.8998
The answer is :[[59, 56, 102], [101, 111, 128], [140, 124, 126], [166, 159, 157]]

in generation 20 best fitness is: **15.8535**
The answer is :[[59, 53, 101], [140, 123, 125], [155, 143, 128], [166, 160, 157]]

PSNR :33.201254826553296

in generation 1 best fitness is: 57.4957
The answer is :[[80, 73, 154], [149, 182, 116], [221, 166, 240], [244, 210, 183]]

in generation 2 best fitness is: 57.0573
The answer is :[[114, 121, 108], [143, 166, 103], [208, 134, 64], [229, 233, 112]]

in generation 3 best fitness is: 33.7116

The answer is :[[108, 98, 115], [156, 172, 164], [166, 145, 191], [198, 157, 150]]

in generation 5 best fitness is: 30.6424

The answer is :[[127, 117, 116], [132, 18, 87], [164, 86, 114], [165, 185, 171]]

in generation 6 best fitness is: 25.6539

The answer is :[[87, 97, 129], [133, 107, 128], [167, 152, 150], [201, 162, 168]]

in generation 7 best fitness is: 23.6778

The answer is :[[94, 103, 100], [131, 120, 127], [162, 171, 160], [200, 160, 158]]

in generation 10 best fitness is: 21.6164

The answer is :[[85, 75, 90], [117, 112, 120], [144, 122, 129], [176, 161, 155]]

in generation 11 best fitness is: 20.0232

The answer is :[[64, 77, 83], [103, 107, 139], [136, 119, 124], [168, 158, 156]]

in generation 13 best fitness is: 19.9942

The answer is :[[61, 84, 92], [106, 112, 125], [138, 123, 129], [168, 159, 157]]

in generation 17 best fitness is: 19.8366

The answer is :[[63, 78, 84], [103, 107, 134], [136, 118, 124], [167, 158, 156]]

in generation 18 best fitness is: 19.4899

The answer is :[[62, 83, 89], [138, 123, 127], [150, 145, 128], [167, 159, 156]]

in generation 20 best fitness is: **19.2739**

The answer is :[[62, 81, 87], [137, 121, 126], [151, 146, 125], [166, 159, 156]]

PSNR :31.40681540710687

in generation 1 best fitness is: 72.1473

The answer is :[[66, 239, 221], [77, 144, 176], [90, 228, 125], [161, 179, 111]]

in generation 2 best fitness is: 48.4833

The answer is :[[94, 78, 41], [143, 155, 130], [169, 89, 229], [199, 96, 60]]

in generation 3 best fitness is: 38.4464

The answer is :[[102, 86, 133], [159, 124, 147], [186, 160, 194], [228, 119, 106]]

in generation 4 best fitness is: 32.5359

The answer is :[[48, 98, 138], [112, 104, 114], [153, 160, 167], [174, 120, 124]]

in generation 5 best fitness is: 26.741

The answer is :[[80, 70, 135], [121, 121, 142], [152, 151, 170], [187, 165, 174]]

in generation 6 best fitness is: 25.8172

The answer is :[[81, 54, 119], [121, 129, 136], [150, 145, 171], [182, 154, 184]]

in generation 7 best fitness is: 25.5534

The answer is :[[66, 71, 118], [119, 117, 133], [147, 157, 160], [181, 127, 139]]

in generation 8 best fitness is: 19.7252

The answer is :[[66, 70, 122], [109, 127, 139], [135, 125, 131], [165, 160, 164]]

in generation 10 best fitness is: 18.4223

The answer is :[[68, 62, 122], [107, 123, 137], [134, 128, 133], [163, 160, 163]]

in generation 14 best fitness is: 18.3286

The answer is :[[66, 65, 122], [122, 124, 132], [138, 128, 126], [163, 158, 160]]

in generation 15 best fitness is: 18.0777

The answer is :[[66, 64, 122], [119, 124, 133], [139, 129, 127], [162, 158, 160]]

in generation 17 best fitness is: 18.0231

The answer is :[[66, 63, 121], [113, 123, 131], [136, 127, 130], [163, 159, 161]]

in generation 20 best fitness is: **17.7425**

The answer is :[[66, 63, 121], [115, 122, 132], [137, 127, 127], [162, 158, 160]]

PSNR :31.839530682300968

in generation 1 best fitness is: 37.764

The answer is :[[32, 28, 125], [138, 134, 104], [148, 164, 222], [200, 141, 163]]

in generation 3 best fitness is: 35.4839

The answer is :[[31, 39, 117], [74, 61, 77], [122, 137, 154], [159, 151, 145]]

in generation 4 best fitness is: 33.2656

The answer is :[[64, 124, 160], [120, 98, 105], [148, 147, 147], [174, 130, 152]]

in generation 5 best fitness is: 30.2294

The answer is :[[72, 50, 76], [124, 135, 133], [150, 149, 158], [216, 197, 157]]

in generation 6 best fitness is: 26.485

The answer is :[[90, 100, 102], [127, 124, 125], [162, 155, 162], [185, 158, 107]]

in generation 9 best fitness is: 22.7741

The answer is :[[71, 96, 159], [72, 76, 92], [128, 115, 123], [162, 151, 157]
]
in genertion 11 best fitness is: 22.4907
The answer is :[[65, 62, 81], [130, 113, 123], [163, 148, 159], [181, 159, 85
]]
in genertion 12 best fitness is: 22.2206
The answer is :[[68, 65, 85], [73, 96, 168], [131, 114, 124], [162, 148, 158]
]
in genertion 14 best fitness is: 21.6916
The answer is :[[64, 63, 92], [131, 113, 122], [162, 147, 158], [187, 170, 97
]]
in genertion 16 best fitness is: 20.9742
The answer is :[[64, 66, 107], [132, 112, 120], [162, 147, 157], [191, 181, 1
10]]
in genertion 20 best fitness is: **20.5517**
The answer is :[[64, 66, 102], [74, 86, 151], [134, 116, 125], [165, 151, 158
]]
PSNR :29.73441423564962

in genertion 1 best fitness is: 55.9589
The answer is :[[160, 69, 81], [162, 108, 131], [226, 62, 113], [233, 107, 18
5]]
in genertion 2 best fitness is: 53.5531
The answer is :[[108, 102, 100], [129, 202, 179], [150, 96, 179], [230, 103,
152]]
in genertion 3 best fitness is: 41.9334
The answer is :[[137, 127, 122], [160, 220, 189], [182, 166, 191], [225, 130,
151]]
in genertion 4 best fitness is: 34.9163
The answer is :[[125, 92, 108], [160, 146, 173], [200, 206, 145], [225, 114,
205]]
in genertion 5 best fitness is: 31.4239
The answer is :[[31, 125, 95], [89, 68, 87], [146, 133, 123], [179, 164, 184]
]
in genertion 7 best fitness is: 24.5575
The answer is :[[45, 105, 74], [62, 120, 103], [138, 124, 123], [158, 156, 15
4]]
in genertion 8 best fitness is: 24.1803
The answer is :[[50, 104, 87], [142, 130, 123], [165, 166, 157], [212, 150, 1
53]]
in genertion 9 best fitness is: 22.7613
The answer is :[[58, 84, 92], [127, 117, 117], [165, 164, 150], [211, 182, 13
4]]
in genertion 11 best fitness is: 19.6079

The answer is :[[40, 95, 106], [69, 77, 88], [132, 120, 117], [164, 160, 159]
]

in generation 19 best fitness is: **19.5198**

The answer is :[[40, 93, 106], [68, 77, 87], [131, 118, 117], [164, 161, 158]
]

PSNR :30.98520804369992

in generation 1 best fitness is: 59.2902

The answer is :[[104, 88, 106], [210, 159, 119], [242, 132, 253], [249, 160, 204]]

in generation 2 best fitness is: 53.9548

The answer is :[[35, 74, 49], [40, 102, 146], [142, 201, 165], [175, 152, 151]
]]

in generation 3 best fitness is: 35.879

The answer is :[[57, 45, 169], [102, 100, 81], [121, 128, 121], [179, 164, 16
8]]

in generation 5 best fitness is: 30.5814

The answer is :[[53, 40, 166], [117, 120, 124], [143, 141, 153], [168, 154, 1
71]]

in generation 6 best fitness is: 28.8118

The answer is :[[34, 42, 147], [135, 133, 122], [162, 143, 161], [164, 164, 1
63]]

in generation 7 best fitness is: 28.5126

The answer is :[[41, 43, 147], [102, 117, 104], [143, 136, 137], [170, 161, 1
60]]

in generation 8 best fitness is: 24.9799

The answer is :[[58, 43, 143], [96, 102, 117], [140, 130, 147], [168, 157, 16
0]]

in generation 9 best fitness is: 23.601

The answer is :[[63, 49, 131], [126, 116, 113], [159, 148, 143], [174, 158, 1
29]]

in generation 10 best fitness is: 21.0083

The answer is :[[62, 43, 136], [93, 103, 117], [132, 127, 132], [165, 161, 15
5]]

in generation 15 best fitness is: 19.7732

The answer is :[[67, 41, 132], [96, 102, 120], [135, 124, 133], [164, 158, 14
9]]

in generation 17 best fitness is: 19.7209

The answer is :[[65, 42, 132], [94, 101, 119], [133, 124, 131], [163, 157, 15
0]]

in generation 18 best fitness is: 19.5797

The answer is :[[65, 41, 132], [94, 101, 119], [133, 124, 131], [163, 157, 15
0]]

in generation 19 best fitness is: **19.5015**

The answer is :[[65, 41, 131], [94, 101, 119], [133, 124, 131], [163, 156, 150]]

PSNR :31.562077002124536

in generation 1 best fitness is: 54.9247

The answer is :[[18, 42, 54], [158, 95, 130], [180, 118, 221], [203, 111, 117]]

in generation 2 best fitness is: 44.867

The answer is :[[101, 108, 161], [118, 140, 158], [176, 163, 168], [245, 165, 252]]

in generation 3 best fitness is: 35.7046

The answer is :[[48, 37, 130], [139, 216, 155], [162, 160, 156], [233, 197, 160]]

in generation 4 best fitness is: 30.3744

The answer is :[[76, 152, 188], [122, 109, 132], [144, 150, 147], [179, 112, 159]]

in generation 5 best fitness is: 27.4187

The answer is :[[105, 119, 114], [121, 77, 103], [151, 156, 155], [222, 81, 146]]

in generation 7 best fitness is: 21.7357

The answer is :[[115, 91, 106], [140, 116, 128], [151, 156, 155], [222, 81, 146]]

in generation 10 best fitness is: 19.4841

The answer is :[[92, 80, 121], [135, 112, 127], [159, 151, 150], [219, 135, 149]]

in generation 12 best fitness is: 18.4846

The answer is :[[81, 75, 118], [129, 109, 123], [155, 150, 150], [221, 139, 145]]

in generation 13 best fitness is: 18.1813

The answer is :[[83, 77, 118], [131, 110, 124], [156, 151, 151], [221, 140, 146]]

in generation 15 best fitness is: 18.0598

The answer is :[[79, 74, 118], [129, 110, 123], [155, 151, 150], [223, 143, 145]]

in generation 17 best fitness is: 17.9825

The answer is :[[80, 75, 118], [129, 110, 123], [155, 151, 151], [222, 141, 144]]

in generation 18 best fitness is: **17.8998**

The answer is :[[33, 114, 111], [79, 75, 118], [129, 111, 123], [155, 151, 151]]

PSNR :31.302588525099992

in generation 1 best fitness is: 69.3924
The answer is :[[129, 203, 75], [138, 84, 107], [142, 244, 251], [246, 186, 253]]

in generation 2 best fitness is: 39.6189
The answer is :[[125, 100, 106], [158, 127, 125], [169, 130, 225], [250, 112, 151]]

in generation 4 best fitness is: 28.852
The answer is :[[12, 84, 107], [57, 57, 93], [144, 183, 159], [157, 147, 153]]

in generation 7 best fitness is: 27.4524
The answer is :[[81, 85, 76], [115, 130, 136], [159, 151, 143], [211, 123, 108]]

in generation 9 best fitness is: 22.2085
The answer is :[[83, 78, 110], [121, 123, 111], [163, 154, 151], [208, 148, 149]]

in generation 10 best fitness is: 19.4993
The answer is :[[56, 117, 122], [87, 86, 98], [127, 121, 123], [155, 149, 149]]

in generation 12 best fitness is: 18.9101
The answer is :[[90, 86, 102], [127, 118, 126], [155, 150, 151], [195, 140, 128]]

in generation 13 best fitness is: 18.6699
The answer is :[[84, 84, 103], [122, 119, 122], [154, 150, 150], [198, 145, 140]]

in generation 16 best fitness is: 18.5456
The answer is :[[84, 84, 102], [124, 119, 121], [154, 150, 149], [198, 142, 134]]

in generation 20 best fitness is: **18.4034**
The answer is :[[84, 84, 101], [125, 119, 120], [154, 150, 149], [198, 140, 130]]

PSNR :31.461628856080477

in generation 1 best fitness is: 53.8482
The answer is :[[58, 202, 175], [93, 129, 192], [130, 207, 119], [161, 107, 119]]

in generation 2 best fitness is: 39.7067
The answer is :[[46, 128, 171], [129, 162, 6], [134, 209, 42], [155, 135, 142]]

in generation 4 best fitness is: 35.1338
The answer is :[[73, 103, 111], [137, 138, 140], [201, 147, 121], [206, 142, 97]]

in generation 5 best fitness is: 30.7165
The answer is :[[86, 130, 129], [122, 132, 152], [131, 108, 130], [166, 169, 165]]

in generation 6 best fitness is: 24.0071

The answer is :[[31, 71, 90], [61, 122, 163], [119, 113, 136], [159, 150, 155]]

in generation 7 best fitness is: 23.5336

The answer is :[[76, 79, 102], [113, 144, 129], [143, 139, 132], [157, 151, 156]]

in generation 9 best fitness is: 17.6153

The answer is :[[76, 78, 105], [126, 119, 121], [139, 134, 129], [155, 150, 153]]

in generation 14 best fitness is: 17.4258

The answer is :[[57, 75, 102], [135, 121, 126], [154, 151, 154], [162, 129, 17]]

in generation 18 best fitness is: 17.3779

The answer is :[[56, 75, 102], [92, 126, 138], [134, 121, 125], [153, 151, 153]]

in generation 19 best fitness is: **17.0689**

The answer is :[[65, 78, 105], [132, 118, 125], [148, 131, 124], [152, 151, 155]]

PSNR :31.306454238893924

in generation 1 best fitness is: 61.0885

The answer is :[[72, 182, 245], [109, 140, 93], [190, 154, 104], [216, 205, 125]]

in generation 2 best fitness is: 34.925

The answer is :[[128, 102, 119], [146, 158, 194], [161, 128, 138], [181, 139, 193]]

in generation 3 best fitness is: 31.8202

The answer is :[[115, 86, 95], [141, 184, 155], [159, 154, 135], [173, 117, 49]]

in generation 4 best fitness is: 27.0052

The answer is :[[79, 137, 87], [114, 118, 106], [122, 103, 108], [148, 146, 150]]

in generation 6 best fitness is: 24.6391

The answer is :[[85, 125, 98], [119, 97, 103], [145, 158, 151], [152, 131, 116]]

in generation 7 best fitness is: 24.3856

The answer is :[[81, 104, 98], [129, 119, 118], [148, 147, 73], [153, 162, 140]]

in generation 8 best fitness is: 23.0728

The answer is :[[63, 113, 105], [92, 109, 147], [134, 121, 121], [158, 160, 148]]

in generation 10 best fitness is: 22.2409

The answer is :[[81, 113, 104], [130, 113, 114], [150, 149, 101], [151, 156, 147]]

in generation 11 best fitness is: 22.0384

The answer is :[[97, 102, 111], [135, 117, 115], [155, 151, 147], [179, 129, 140]]

in generation 12 best fitness is: 21.2002

The answer is :[[82, 111, 103], [132, 115, 116], [143, 141, 115], [154, 155, 147]]

in generation 14 best fitness is: 21.0948

The answer is :[[83, 110, 103], [134, 117, 118], [139, 137, 121], [156, 155, 148]]

in generation 17 best fitness is: 20.8569

The answer is :[[81, 112, 103], [132, 115, 116], [142, 139, 119], [155, 155, 148]]

in generation 20 best fitness is: **20.8515**

The answer is :[[81, 110, 103], [132, 115, 116], [140, 137, 118], [155, 155, 147]]

PSNR :32.10927871146418

in generation 1 best fitness is: 61.5734

The answer is :[[91, 147, 251], [123, 60, 164], [165, 99, 116], [229, 70, 163]]

in generation 2 best fitness is: 42.9487

The answer is :[[57, 68, 113], [134, 114, 125], [135, 95, 187], [206, 118, 251]]

in generation 3 best fitness is: 38.5176

The answer is :[[62, 111, 109], [64, 94, 207], [103, 159, 150], [154, 133, 153]]

in generation 4 best fitness is: 30.6871

The answer is :[[83, 81, 167], [138, 167, 153], [152, 128, 133], [185, 139, 179]]

in generation 6 best fitness is: 28.74

The answer is :[[73, 76, 121], [93, 139, 188], [135, 157, 141], [168, 161, 163]]

in generation 7 best fitness is: 26.3445

The answer is :[[42, 68, 95], [126, 134, 129], [167, 145, 156], [178, 156, 124]]

in generation 8 best fitness is: 23.2066

The answer is :[[27, 47, 63], [60, 48, 127], [121, 117, 116], [167, 143, 159]]

in generation 9 best fitness is: 22.3571

The answer is :[[55, 64, 82], [136, 134, 122], [140, 122, 148], [172, 156, 161]]

in generation 11 best fitness is: 21.5648

The answer is :[[55, 69, 80], [121, 116, 135], [135, 125, 125], [169, 151, 162]]

in generation 12 best fitness is: 20.2982

The answer is :[[51, 64, 85], [138, 125, 128], [158, 162, 141], [165, 150, 156]]

in generation 13 best fitness is: 19.6808

The answer is :[[59, 70, 87], [111, 119, 126], [133, 125, 130], [167, 157, 158]]

in generation 14 best fitness is: 19.0861

The answer is :[[56, 66, 87], [98, 105, 119], [133, 125, 130], [165, 157, 155]]

in generation 18 best fitness is: 18.9925

The answer is :[[58, 68, 86], [125, 117, 127], [141, 132, 127], [165, 154, 157]]

in generation 19 best fitness is: **18.7894**

The answer is :[[55, 66, 87], [99, 105, 119], [134, 125, 129], [164, 156, 155]]

PSNR :31.612281477807898

in generation 1 best fitness is: 58.7053

The answer is :[[60, 175, 128], [128, 149, 165], [215, 190, 180], [232, 122, 177]]

in generation 2 best fitness is: 34.9662

The answer is :[[41, 68, 85], [149, 139, 155], [169, 170, 150], [223, 203, 143]]

in generation 4 best fitness is: 32.9198

The answer is :[[71, 66, 109], [108, 4, 137], [146, 144, 134], [226, 181, 217]]

in generation 5 best fitness is: 26.9009

The answer is :[[85, 25, 119], [147, 142, 141], [179, 182, 147], [225, 188, 192]]

in generation 6 best fitness is: 21.5941

The answer is :[[75, 67, 109], [143, 122, 139], [168, 166, 160], [211, 188, 164]]

in generation 8 best fitness is: 20.7168

The answer is :[[40, 74, 85], [82, 68, 112], [128, 122, 135], [166, 163, 157]]

in generation 10 best fitness is: 18.2869

The answer is :[[84, 65, 116], [138, 122, 127], [165, 158, 155], [213, 175, 181]]

in generation 16 best fitness is: 18.0211

The answer is :[[42, 80, 75], [82, 64, 114], [136, 121, 127], [164, 158, 155]]

in generation 20 best fitness is: **17.9228**

The answer is :[[42, 78, 75], [82, 64, 114], [136, 120, 127], [164, 158, 155]]

PSNR :31.02857482735185