Open loop

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Time on | Time off | Num of ticks | Total time turning | x-position | y-position | score |
| .3 | .4 | 30 | .4 | 104 | -532 | 0 |
| .3 | .4 | 31 | .4 | 471 | -215 | 0 |
| .3 | .4 | 32 | .4 | -170 | -535 | 0 |
| .3 | .4 | 31 | .5 | 75 | -580 | 0 |
| .3 | .4 | 31 | .6 | -221 | -576 | 0 |
| .3 | .4 | 25 | .3 | 536 | 5 | 150 |
| .3 | .4 | 25 | .3 | 507 | -130 | 50 |
| .3 | .4 | 26 | .3 | 256 | 419 | 0 |
| .3 | .4 | 27 | .3 | 441 | -195 | 0 |
| .3 | .4 | 28 | .3 | 516 | 58 | 50 |
| .3 | .4 | 29 | .3 | 480 | 217 | 0 |
| .3 | .4 | 30 | .3 | 400 | -213 | 0 |
| .3 | .4 | 25 | .4 | 453 | -331 | 0 |
| .3 | .4 | 26 | .4 | -23 | -592 | 0 |
| .3 | .4 | 27 | .4 | 497 | -188 | 0 |
| .3 | .4 | 28 | .4 | 176 | -540 | 0 |
| .3 | .4 | 29 | .4 | 451 | -292 | 0 |
| .3 | .4 | 30 | .35 | 446 | 210 | 0 |
| .3 | .4 | 27 | .35 | 526 | -86 | 50 |
| .3 | .4 | 33 | .35 | 484 | 125 | 50 |

Hybrid loop

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Time on | Time off | Num of ticks | Total time turning | Kp (p gain) | x-position | y-position | score |
| .3 | .4 | 35 | .5 | 3 | 497 | 6 | 100 |
| .3 | .4 | 34 | .5 | 3 | 500 | 0 | 100 |
| .3 | .4 | 36 | .5 | 3 | 494 | 9 | 100 |
| .3 | .4 | 30 | .5 | 3 | 518 | -16 | 100 |
| .3 | .4 | 25 | .5 | 3 | 534 | -30 | 150 |
| .3 | .4 | 30 | .5 | 2 | 516 | -17 | 100 |
| .3 | .4 | 33 | .5 | 2 | 507 | -4 | 100 |
| .3 | .4 | 35 | .5 | 2 | 498 | 2 | 100 |
| .3 | .4 | 28 | .5 | 2 | 528 | -18 | 100 |
| .3 | .4 | 25 | .5 | 2 | 532 | -30 | 150 |
| .3 | .4 | 25 | .5 | 1 | 537 | -19 | 150 |
| .3 | .4 | 28 | .5 | 1 | 528 | -16 | 150 |
| .3 | .4 | 30 | .5 | 1 | 522 | -11 | 100 |
| .3 | .4 | 33 | .5 | 1 | 513 | -5 | 100 |
| .3 | .4 | 25 | .5 | 4 | 530 | -31 | 150 |
| .3 | .4 | 28 | .5 | 4 | 517 | -24 | 100 |
| .3 | .4 | 30 | .5 | 4 | 512 | -17 | 100 |
| .3 | .4 | 25 | .5 | .5 | 535 | 3 | 150 |
| .3 | .4 | 28 | .5 | .5 | 527 | -7 | 100 |
| .3 | .4 | 30 | .5 | .5 | 519 | 10 | 150 |

Closed loop

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Time on | Time off | Kp (p gain) | Target distance | Positions (x1,y1)  (x2,y2)  (x3,y3) | x-position | y-position | score |
| .3 | .4 | 3 | 12 | (-1.5,0)  (4,0)  (8.5,0) | 510 | 4 | 100 |
| .3 | .4 | 3 | 24 | (-1.5,0)  (4,0)  (8.5,0) | 506 | -4 | 100 |
| .3 | .4 | 3 | 40 | (-1.5,0)  (4,0)  (8.5,0) | 534 | 8 | 150 |
| .3 | .4 | 3 | 50 | (-1.5,0)  (4,0)  (8.5,0) | 538 | -5 | 150 |
| .3 | .4 | 3 | 12 | (-1,0)  (4,0)  (8.5,0) | 522 | 13 | 100 |
| .3 | .4 | 3 | 12 | (-0.5,0)  (4,0)  (8.5,0) | 531 | -16 | 150 |
| .3 | .4 | 3 | 12 | (0,0)  (4,0)  (8.5,0) | 568 | 2 | 150 |
| .3 | .4 | 3 | 12 | (0.5,0)  (4,0)  (8.5,0) | 574 | -15 | 150 |
| .3 | .4 | 3 | 12 | (1,0)  (4,0)  (8.5,0) | 573 | 19 | 0 |
| .3 | .4 | 3 | 12 | (-1,5)  (2,0)  (8.5,0) | 500 | -8 | 100 |
| .3 | .4 | 3 | 12 | (-1,5)  (6,0)  (8.5,0) | 500 | 4 | 100 |
| .3 | .4 | 3 | 12 | (-1.5,0)  (4,0)  (7,0) | 461 | -26 | 90 |
| .3 | .4 | 3 | 12 | (-1.5,0)  (4,0)  (8,0) | 504 | 3 | 100 |
| .3 | .4 | 3 | 12 | (-1.5,0)  (4,0)  (9.5,0) | 496 | -2 | 100 |
| .3 | .4 | 3 | 24 | (-1,0)  (4,0)  (8.5,0) | 536 | -5 | 150 |
| .3 | .4 | 3 | 40 | (-1,0)  (4,0)  (8.5,0) | 545 | -1 | 150 |
| .3 | .4 | 3 | 50 | (-1,0)  (4,0)  (8.5,0) | 557 | 8 | 150 |
| .3 | .4 | 3 | 12 | (-1.5,0)  (0,0)  (8.5,0) | 492 | -12 | 100 |
| .3 | .4 | 3 | 24 | (-1.5,0)  (0,0)  (8.5,0) | 506 | -1 | 100 |
| .3 | .4 | 3 | 50 | (-1.5,0)  (0,0)  (8.5,0) | 542 | -3 | 150 |