

חלק ראשון

| Add | | |
|-------------------|-----------------|------|
| עץ חיפוש מאוזן | רשימה מקושרת | n |
| 48 | 9 | 50 |
| 54 | 5 | 150 |
| 53 | 5 | 250 |
| 60 | 6 | 350 |
| 54 | 6 | 450 |
| 78 | 8 | 550 |
| 60 | 5 | 650 |
| 62 | 5 | 750 |
| 62 | 5 | 850 |
| 59 | 5 | 950 |
| 79 | 6 | 1050 |
| 64 | 6 | 1150 |
| 70 | 6 | 1250 |
| 66 | 5 | 1350 |
| 73 | 6 | 1450 |
| 68 | 6 | 1550 |
| 66 | 5 | 1650 |
| 170 | 7 | 1750 |
| 64 | 6 | 1850 |
| 68 | 5 | 1950 |
| 67 | 5 | 2050 |
| 81 | 5 | 2150 |
| 73 | 6 | 2250 |
| 74 | 8 | 2350 |
| 74 | 5 | 2450 |
| 74 | 10 | 2550 |
| 75 | 5 | 2650 |
| 70 | 6 | 2750 |
| 76 | 7 | 2850 |
| 88 | 9 | 2950 |
| 75 | 6 | 3050 |
| 79 | 5 | 3150 |
| 71 | 5 | 3250 |
| 75 | 5 | 3350 |
| 72 | 7 | 3450 |
| 75 | 5 | 3550 |
| 71 | 6 | 3650 |
| 77 | 6 | 3750 |
| 74 | 5 | 3850 |
| 77 | 5 | 3950 |
| 74 | 8 | 4050 |
| 76 | 5 | 4150 |
| 84 | 5 | 4250 |
| 80 | 6 | 4350 |

| | | |
|-----|----|------|
| 84 | 5 | 4450 |
| 77 | 5 | 4550 |
| 88 | 8 | 4650 |
| 81 | 5 | 4750 |
| 82 | 5 | 4850 |
| 85 | 6 | 4950 |
| 80 | 5 | 5050 |
| 80 | 5 | 5150 |
| 79 | 11 | 5250 |
| 95 | 5 | 5350 |
| 78 | 5 | 5450 |
| 80 | 5 | 5550 |
| 86 | 7 | 5650 |
| 81 | 5 | 5750 |
| 128 | 7 | 5850 |
| 79 | 5 | 5950 |
| 83 | 5 | 6050 |
| 76 | 5 | 6150 |
| 79 | 5 | 6250 |
| 94 | 7 | 6350 |
| 74 | 6 | 6450 |
| 78 | 6 | 6550 |
| 79 | 6 | 6650 |
| 84 | 6 | 6750 |
| 79 | 5 | 6850 |
| 83 | 7 | 6950 |
| 79 | 5 | 7050 |
| 90 | 5 | 7150 |
| 84 | 14 | 7250 |
| 80 | 6 | 7350 |
| 85 | 5 | 7450 |
| 90 | 7 | 7550 |
| 87 | 6 | 7650 |
| 85 | 6 | 7750 |
| 81 | 9 | 7850 |
| 87 | 5 | 7950 |
| 79 | 6 | 8050 |
| 81 | 7 | 8150 |
| 89 | 5 | 8250 |
| 91 | 6 | 8350 |
| 93 | 6 | 8450 |
| 90 | 5 | 8550 |
| 88 | 5 | 8650 |
| 97 | 7 | 8750 |
| 92 | 6 | 8850 |
| 99 | 5 | 8950 |
| 93 | 6 | 9050 |
| 88 | 5 | 9150 |
| 93 | 5 | 9250 |

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|-----|---|------|
| 89 | 7 | 9350 |
| 91 | 5 | 9450 |
| 89 | 6 | 9550 |
| 101 | 6 | 9650 |
| 95 | 6 | 9750 |
| 91 | 7 | 9850 |
| 99 | 5 | 9950 |

| Delete | | |
|-------------------|-----------------|------|
| עץ חיפוש מאוזן | רשימה מקושרת | n |
| 56 | 3886 | 9950 |
| 50 | 23 | 9850 |
| 44 | 22719 | 9750 |
| 48 | 25 | 9650 |
| 45 | 10592 | 9550 |
| 50 | 23 | 9450 |
| 43 | 3836 | 9350 |
| 46 | 24 | 9250 |
| 43 | 17748 | 9150 |
| 53 | 24 | 9050 |
| 48 | 3703 | 8950 |
| 47 | 24 | 8850 |
| 40 | 17478 | 8750 |
| 49 | 24 | 8650 |
| 43 | 3454 | 8550 |
| 49 | 24 | 8450 |
| 43 | 17394 | 8350 |
| 47 | 29 | 8250 |
| 44 | 3187 | 8150 |
| 44 | 23 | 8050 |
| 43 | 17128 | 7950 |
| 47 | 23 | 7850 |
| 39 | 3060 | 7750 |
| 44 | 24 | 7650 |
| 41 | 2990 | 7550 |
| 46 | 24 | 7450 |
| 37 | 18961 | 7350 |
| 47 | 24 | 7250 |
| 39 | 2942 | 7150 |
| 46 | 24 | 7050 |
| 51 | 16787 | 6950 |
| 51 | 24 | 6850 |
| 45 | 2713 | 6750 |
| 48 | 24 | 6650 |
| 41 | 12620 | 6550 |
| 50 | 24 | 6450 |
| 42 | 2485 | 6350 |

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|----|-------|------|
| 46 | 23 | 6250 |
| 43 | 2409 | 6150 |
| 45 | 24 | 6050 |
| 42 | 2400 | 5950 |
| 44 | 24 | 5850 |
| 38 | 11005 | 5750 |
| 41 | 25 | 5650 |
| 39 | 2261 | 5550 |
| 46 | 24 | 5450 |
| 38 | 2157 | 5350 |
| 44 | 23 | 5250 |
| 38 | 2121 | 5150 |
| 42 | 25 | 5050 |
| 39 | 1997 | 4950 |
| 50 | 24 | 4850 |
| 36 | 15880 | 4750 |
| 43 | 24 | 4650 |
| 40 | 1801 | 4550 |
| 44 | 23 | 4450 |
| 38 | 1713 | 4350 |
| 47 | 23 | 4250 |
| 42 | 15951 | 4150 |
| 40 | 23 | 4050 |
| 41 | 1587 | 3950 |
| 40 | 23 | 3850 |
| 39 | 1497 | 3750 |
| 38 | 24 | 3650 |
| 38 | 1404 | 3550 |
| 39 | 24 | 3450 |
| 39 | 1352 | 3350 |
| 41 | 24 | 3250 |
| 38 | 15265 | 3150 |
| 38 | 24 | 3050 |
| 39 | 1165 | 2950 |
| 36 | 23 | 2850 |
| 36 | 1081 | 2750 |
| 39 | 23 | 2650 |
| 35 | 1006 | 2550 |
| 47 | 23 | 2450 |
| 37 | 924 | 2350 |
| 41 | 23 | 2250 |
| 42 | 847 | 2150 |
| 37 | 14036 | 2050 |
| 39 | 810 | 1950 |
| 37 | 24 | 1850 |
| 37 | 730 | 1750 |
| 36 | 24 | 1650 |
| 34 | 647 | 1550 |
| 36 | 24 | 1450 |

| | | |
|----|-----|------|
| 34 | 556 | 1350 |
| 37 | 24 | 1250 |
| 34 | 475 | 1150 |
| 34 | 23 | 1050 |
| 34 | 375 | 950 |
| 33 | 24 | 850 |
| 34 | 306 | 750 |
| 33 | 23 | 650 |
| 32 | 213 | 550 |
| 33 | 23 | 450 |
| 30 | 137 | 350 |
| 32 | 23 | 250 |
| 27 | 61 | 150 |
| 21 | 23 | 50 |

| Find | | |
|-------------------|-----------------|------|
| עץ חיפוש מאוזן | רשימה מקושרת | n |
| 8 | 23 | 100 |
| 8 | 22 | 100 |
| 8 | 59 | 200 |
| 8 | 22 | 200 |
| 8 | 108 | 300 |
| 9 | 23 | 300 |
| 9 | 142 | 400 |
| 9 | 23 | 400 |
| 8 | 176 | 500 |
| 8 | 21 | 500 |
| 8 | 219 | 600 |
| 9 | 23 | 600 |
| 8 | 266 | 700 |
| 9 | 22 | 700 |
| 12 | 294 | 800 |
| 9 | 21 | 800 |
| 9 | 332 | 900 |
| 8 | 22 | 900 |
| 8 | 375 | 1000 |
| 8 | 21 | 1000 |
| 10 | 410 | 1100 |
| 9 | 21 | 1100 |
| 8 | 456 | 1200 |
| 12 | 22 | 1200 |
| 8 | 496 | 1300 |
| 9 | 22 | 1300 |
| 7 | 531 | 1400 |
| 9 | 22 | 1400 |
| 7 | 565 | 1500 |
| 9 | 21 | 1500 |

| | | |
|----|-------|------|
| 10 | 607 | 1600 |
| 9 | 22 | 1600 |
| 10 | 646 | 1700 |
| 9 | 21 | 1700 |
| 9 | 684 | 1800 |
| 9 | 21 | 1800 |
| 11 | 724 | 1900 |
| 10 | 21 | 1900 |
| 9 | 763 | 2000 |
| 9 | 21 | 2000 |
| 9 | 10804 | 2100 |
| 11 | 22 | 2100 |
| 9 | 843 | 2200 |
| 10 | 21 | 2200 |
| 9 | 879 | 2300 |
| 10 | 21 | 2300 |
| 8 | 917 | 2400 |
| 10 | 21 | 2400 |
| 8 | 955 | 2500 |
| 10 | 22 | 2500 |
| 11 | 999 | 2600 |
| 10 | 22 | 2600 |
| 9 | 1051 | 2700 |
| 10 | 22 | 2700 |
| 9 | 1074 | 2800 |
| 10 | 22 | 2800 |
| 9 | 1116 | 2900 |
| 12 | 21 | 2900 |
| 9 | 1225 | 3000 |
| 10 | 33 | 3000 |
| 11 | 11255 | 3100 |
| 9 | 22 | 3100 |
| 14 | 1280 | 3200 |
| 11 | 22 | 3200 |
| 13 | 1267 | 3300 |
| 14 | 21 | 3300 |
| 10 | 1311 | 3400 |
| 10 | 21 | 3400 |
| 9 | 1360 | 3500 |
| 10 | 22 | 3500 |
| 9 | 1396 | 3600 |
| 9 | 21 | 3600 |
| 9 | 1426 | 3700 |
| 9 | 22 | 3700 |
| 9 | 3498 | 3800 |
| 10 | 23 | 3800 |
| 9 | 1601 | 3900 |
| 10 | 21 | 3900 |
| 9 | 1541 | 4000 |

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|----|-------|------|
| 10 | 21 | 4000 |
| 25 | 1635 | 4100 |
| 10 | 22 | 4100 |
| 12 | 1663 | 4200 |
| 15 | 22 | 4200 |
| 10 | 1688 | 4300 |
| 11 | 23 | 4300 |
| 9 | 1752 | 4400 |
| 11 | 22 | 4400 |
| 12 | 21750 | 4500 |
| 10 | 21 | 4500 |
| 12 | 1786 | 4600 |
| 15 | 22 | 4600 |
| 10 | 1828 | 4700 |
| 11 | 22 | 4700 |
| 10 | 1966 | 4800 |
| 14 | 23 | 4800 |
| 12 | 1967 | 4900 |
| 14 | 22 | 4900 |
| 12 | 1961 | 5000 |
| 13 | 22 | 5000 |
| 13 | 2067 | 5100 |
| 15 | 22 | 5100 |
| 12 | 2087 | 5200 |
| 14 | 23 | 5200 |
| 12 | 2237 | 5300 |
| 14 | 22 | 5300 |
| 12 | 2191 | 5400 |
| 16 | 10030 | 5400 |
| 12 | 2133 | 5500 |
| 14 | 22 | 5500 |
| 12 | 2236 | 5600 |
| 14 | 22 | 5600 |
| 10 | 2311 | 5700 |
| 11 | 21 | 5700 |
| 11 | 2472 | 5800 |
| 13 | 23 | 5800 |
| 10 | 12339 | 5900 |
| 13 | 22 | 5900 |
| 13 | 2371 | 6000 |
| 13 | 22 | 6000 |
| 11 | 2465 | 6100 |
| 11 | 33 | 6100 |
| 12 | 2422 | 6200 |
| 11 | 22 | 6200 |
| 12 | 12508 | 6300 |
| 10 | 22 | 6300 |
| 13 | 2629 | 6400 |
| 11 | 22 | 6400 |

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|----|-------|------|
| 11 | 2543 | 6500 |
| 11 | 22 | 6500 |
| 10 | 2618 | 6600 |
| 10 | 24 | 6600 |
| 10 | 21683 | 6700 |
| 11 | 21 | 6700 |
| 10 | 2698 | 6800 |
| 11 | 23 | 6800 |
| 9 | 2777 | 6900 |
| 11 | 22 | 6900 |
| 10 | 10355 | 7000 |
| 10 | 22 | 7000 |
| 10 | 2810 | 7100 |
| 10 | 22 | 7100 |
| 10 | 2875 | 7200 |
| 11 | 21 | 7200 |
| 9 | 2844 | 7300 |
| 10 | 22 | 7300 |
| 9 | 12895 | 7400 |
| 10 | 21 | 7400 |
| 9 | 2920 | 7500 |
| 11 | 21 | 7500 |
| 10 | 2960 | 7600 |
| 12 | 22 | 7600 |
| 10 | 8710 | 7700 |
| 10 | 22 | 7700 |
| 10 | 4642 | 7800 |
| 10 | 26 | 7800 |
| 9 | 3156 | 7900 |
| 10 | 22 | 7900 |
| 9 | 3118 | 8000 |
| 11 | 22 | 8000 |
| 9 | 13147 | 8100 |
| 10 | 22 | 8100 |
| 9 | 3288 | 8200 |
| 11 | 22 | 8200 |
| 10 | 3325 | 8300 |
| 16 | 33 | 8300 |
| 10 | 22325 | 8400 |
| 23 | 21 | 8400 |
| 10 | 3389 | 8500 |
| 16 | 21 | 8500 |
| 10 | 3423 | 8600 |
| 14 | 22 | 8600 |
| 10 | 13520 | 8700 |
| 14 | 21 | 8700 |
| 10 | 3418 | 8800 |
| 15 | 21 | 8800 |
| 10 | 3461 | 8900 |

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|----|-------|-------|
| 14 | 22 | 8900 |
| 10 | 13541 | 9000 |
| 15 | 22 | 9000 |
| 9 | 3575 | 9100 |
| 13 | 22 | 9100 |
| 10 | 3656 | 9200 |
| 15 | 22 | 9200 |
| 10 | 13704 | 9300 |
| 14 | 22 | 9300 |
| 9 | 3933 | 9400 |
| 15 | 23 | 9400 |
| 10 | 13774 | 9500 |
| 13 | 22 | 9500 |
| 9 | 3775 | 9600 |
| 12 | 22 | 9600 |
| 9 | 3794 | 9700 |
| 15 | 22 | 9700 |
| 10 | 3804 | 9800 |
| 13 | 21 | 9800 |
| 10 | 17928 | 9900 |
| 15 | 22 | 9900 |
| 10 | 4135 | 10000 |
| 13 | 25 | 10000 |

להלן הגרפים:

