



## World Para Athletics Raza Point Scores 2017

Method to calculate the points for a specific performance is the Gompertz function:

$$G(p, a, b, c) = q = ae^{-e^{b-\frac{c}{p}}}$$

To calculate the required performance for given points, the inverse Gompertz function is

$$G^{-1}(q, a, b, c) = p = c / \left( b - \ln \left( \ln \left( \frac{a}{q} \right) \right) \right)$$

with performance  $p$  (in seconds), points  $q$ , and parameters  $a, b, c$  as given in the table below:

| Event        | Class  | a        | b (Men)   | c (Men)  | b (Women) | c (Women) |
|--------------|--------|----------|-----------|----------|-----------|-----------|
| <b>100 m</b> | T11    | 1200     | 10.971191 | 139.8393 | 9.565428  | 135.2512  |
|              | T12    | 1200     | 10.971191 | 138.0283 | 9.565428  | 134.3535  |
|              | T13    | 1200     | 10.971191 | 137.0257 | 9.565428  | 135.1153  |
|              | T33    | 1200     | 9.188962  | 176.9927 | 8.795080  | 207.6976  |
|              | T34    | 1200     | 9.188962  | 165.4070 | 8.795080  | 182.1833  |
|              | T35    | 1200     | 10.971191 | 155.0682 | 9.565428  | 165.4710  |
|              | T36    | 1200     | 10.971191 | 150.9139 | 9.565428  | 159.5234  |
|              | T37    | 1200     | 10.971191 | 144.3758 | 9.565428  | 152.7994  |
|              | T38    | 1200     | 10.971191 | 140.0295 | 9.565428  | 145.8051  |
|              | T42    | 1200     | 10.971191 | 151.2637 | 9.565428  | 172.3306  |
|              | T43/44 | 1200     | 10.971191 | 137.2960 | 9.565428  | 142.8366  |
|              | T45-47 | 1200     | 10.971191 | 137.6635 | 9.565428  | 138.1694  |
|              | T51    | 1200     | 9.188962  | 220.2271 | 8.795080  | 251.5059  |
|              | T52    | 1200     | 9.188962  | 182.7650 | 8.795080  | 192.4248  |
|              | T53    | 1200     | 9.188962  | 156.7935 | 8.795080  | 170.7723  |
|              | T54    | 1200     | 9.188962  | 150.0075 | 8.795080  | 169.4746  |
| <b>200 m</b> | T11    | 1200     | 10.581572 | 274.7324 | 8.812916  | 259.2264  |
|              | T12    | 1200     | 10.581572 | 269.0006 | 8.812916  | 254.7020  |
|              | T13    | 1200     | 10.581572 | 268.4266 | 8.812916  | 261.0125  |
|              | T33    | 1200     | 8.747546  | 304.6593 | 8.056335  | 351.9119  |
|              | T34    | 1200     | 8.747546  | 280.2003 | 8.056335  | 301.3124  |
|              | T35    | 1200     | 10.581572 | 309.2351 | 8.812916  | 309.9297  |
|              | T36    | 1200     | 10.581572 | 300.8655 | 8.812916  | 309.3501  |
|              | T37    | 1200     | 10.581572 | 282.3999 | 8.812916  | 299.5924  |
|              | T38    | 1200     | 10.581572 | 277.0017 | 8.812916  | 283.3035  |
|              | T42    | 1200     | 10.581572 | 300.8875 | 8.812916  | 343.6624  |
|              | T43    | 1200     | 10.581572 | 254.7984 | 8.812916  | 266.6578  |
|              | T44    | 1200     | 10.581572 | 271.6323 | 8.812916  | 280.0557  |
|              | T45-47 | 1200     | 10.581572 | 267.7778 | 8.812916  | 265.9380  |
|              | T51    | 1200     | 8.747546  | 392.2052 | 8.056335  | 463.6787  |
|              | T52    | 1200     | 8.747546  | 316.2329 | 8.056335  | 318.3059  |
|              | T53    | 1200     | 8.747546  | 265.5568 | 8.056335  | 281.6205  |
| T54          | 1200   | 8.747546 | 254.2383  | 8.056335 | 283.2797  |           |
| <b>400 m</b> | T11    | 1200     | 9.870037  | 575.9360 | 8.778692  | 588.9641  |
|              | T12    | 1200     | 9.870037  | 561.8438 | 8.778692  | 572.6452  |
|              | T13    | 1200     | 9.870037  | 552.1368 | 8.778692  | 567.2968  |
|              | T20    | 1200     | 9.870037  | 557.7789 | 8.778692  | 608.5746  |
|              | T33    | 1200     | 8.540093  | 581.1445 | 7.251277  | 638.1533  |
|              | T34    | 1200     | 8.540093  | 517.8114 | 7.251277  | 513.7536  |
|              | T35    | 1200     | 9.870037  | 680.6504 | 8.778692  | 721.9146  |
|              | T36    | 1200     | 9.870037  | 614.9496 | 8.778692  | 720.2234  |
| T37          | 1200   | 9.870037 | 594.7471  | 8.778692 | 665.0285  |           |

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|                      |               |      |           |            |            |            |
|----------------------|---------------|------|-----------|------------|------------|------------|
| <b>400 m (cont.)</b> | T38           | 1200 | 9.870037  | 574.4288   | 8.778692   | 633.2867   |
|                      | T42           | 1200 | 9.870037  | 627.9278   | n/a        | n/a        |
|                      | T43           | 1200 | 9.870037  | 522.0783   | 8.778692   | 613.0546   |
|                      | T44           | 1200 | 9.870037  | 589.5104   | 8.778692   | 600.9169   |
|                      | T45-47        | 1200 | 9.870037  | 562.9898   | 8.778692   | 591.0744   |
|                      | T51           | 1200 | 8.540093  | 784.2038   | n/a        | n/a        |
|                      | T52           | 1200 | 8.540093  | 589.0888   | 7.251277   | 574.0989   |
|                      | T53           | 1200 | 8.540093  | 489.6704   | 7.251277   | 485.3585   |
|                      | T54           | 1200 | 8.540093  | 467.5610   | 7.251277   | 476.9784   |
|                      | <b>800 m</b>  | T11  | 1200      | 11.942383  | 1613.9099  | 8.440072   |
| T12                  |               | 1200 | 11.942383 | 1558.9685  | 8.440072   | 1366.9522  |
| T13                  |               | 1200 | 11.942383 | 1517.5663  | 8.440072   | 1508.7781  |
| T20                  |               | 1200 | 11.942383 | 1537.7072  | 8.440072   | 1395.5184  |
| T33                  |               | 1200 | 8.116620  | 1139.5177  | 6.577420   | 1225.8876  |
| T34                  |               | 1200 | 8.116620  | 964.7862   | 6.577420   | 955.1956   |
| T36                  |               | 1200 | 11.942383 | 1712.8428  | n/a        | n/a        |
| T37                  |               | 1200 | 11.942383 | 1624.2832  | n/a        | n/a        |
| T38                  |               | 1200 | 11.942383 | 1671.0284  | n/a        | n/a        |
| T44                  |               | 1200 | 11.942383 | 1852.1757  | n/a        | n/a        |
| T45-47               |               | 1200 | 11.942383 | 1536.8019  | 8.440072   | 1394.2799  |
| T51                  |               | 1200 | 8.116620  | 1661.5400  | n/a        | n/a        |
| T52                  |               | 1200 | 8.116620  | 1102.4707  | 6.577420   | 1056.9599  |
| T53                  |               | 1200 | 8.116620  | 924.5229   | 6.577420   | 870.7373   |
| T54                  |               | 1200 | 8.116620  | 898.9787   | 6.577420   | 854.6080   |
| <b>1500 m</b>        |               | T11  | 1200      | 11.096869  | 3101.8311  | 9.094658   |
|                      | T12           | 1200 | 11.096869 | 2940.0777  | 9.094658   | 2916.9698  |
|                      | T13           | 1200 | 11.096869 | 2903.9725  | 9.094658   | 2779.4762  |
|                      | T20           | 1200 | 11.096869 | 2975.6249  | 9.094658   | 2790.3554  |
|                      | T33           | 1200 | n/a       | n/a        | 6.171597   | 2258.9400  |
|                      | T34           | 1200 | 7.651074  | 1753.5823  | 6.171597   | 1772.5411  |
|                      | T36           | 1200 | 11.096869 | 3447.3699  | n/a        | n/a        |
|                      | T37           | 1200 | 11.096869 | 3157.4179  | n/a        | n/a        |
|                      | T38           | 1200 | 11.096869 | 3117.1772  | n/a        | n/a        |
|                      | T44           | 1200 | 11.096869 | 4029.7804  | n/a        | n/a        |
|                      | T45-47        | 1200 | 11.096869 | 2938.9290  | n/a        | n/a        |
|                      | T51           | 1200 | 7.651074  | 2957.3104  | n/a        | n/a        |
|                      | T52           | 1200 | 7.651074  | 2014.7294  | n/a        | n/a        |
|                      | T53/54        | 1200 | 7.651074  | 1626.6371  | 6.171597   | 1507.5438  |
|                      | <b>5000 m</b> | T11  | 1200      | 11.003900  | 11595.9985 | 12.017403  |
| T12                  |               | 1200 | 11.003900 | 10933.2979 | 12.017403  | 14580.0661 |
| T13                  |               | 1200 | 11.003900 | 11106.8339 | n/a        | n/a        |
| T20                  |               | 1200 | 11.003900 | 11370.6911 | 12.017403  | 14566.8318 |
| T34                  |               | 1200 | 8.444580  | 6910.9762  | n/a        | n/a        |
| T45-47               |               | 1200 | 11.003900 | 10902.9801 | n/a        | n/a        |
| T51                  |               | 1200 | 8.444580  | 10863.4256 | n/a        | n/a        |
| T52                  |               | 1200 | 8.444580  | 7720.4339  | n/a        | n/a        |
| T53/54               |               | 1200 | 8.444580  | 5918.2277  | 8.684906   | 6818.2374  |
| <b>10000 m</b>       |               | T11  | 1200      | 11.830701  | 26162.0992 | n/a        |
|                      | T12           | 1200 | 11.830701 | 24714.9944 | n/a        | n/a        |
|                      | T13           | 1200 | 11.830701 | 25242.8550 | n/a        | n/a        |
|                      | T20           | 1200 | 11.830701 | 25766.1367 | n/a        | n/a        |
|                      | T45-47        | 1200 | 11.830701 | 25949.7934 | n/a        | n/a        |
|                      | T51           | 1200 | 9.188935  | 22627.7240 | n/a        | n/a        |
|                      | T52           | 1200 | 9.188935  | 17188.5881 | n/a        | n/a        |
|                      | T53/54        | 1200 | 9.188935  | 12722.7120 | n/a        | n/a        |



## Youth Point Scores 2017

For youth events, the formula as shown above does not change apart from an adjustment of the  $c$  factor to reflect the performance difference between top performers at major international Para athletics competitions and the average of performances expected at youth events.

Method to calculate the points for a specific performance remains the Gompertz function with an additional static factor applicable to all genders, events, and classes:

$$G(p, a, b, c) = q = ae^{-e^{b-1.16 \cdot \frac{c}{p}}}$$

To calculate the required performance for given points, the inverse Gompertz function is

$$G^{-1}(q, a, b, c) = p = 1.16 \cdot c / \left( b - \ln \left( \ln \left( \frac{a}{q} \right) \right) \right)$$

with performance  $p$  (in seconds), points  $q$ , and parameters  $a, b, c$  as listed on pages 1-2 in this document.