The 50 wealthiest people in the United States, by rank with information on age

| rank | name | worth | age |
|---|---|---|---|
| 1 | Gates, William H. III | 54000 | 45 |
| 2 | Buffett, Warren Edward | 33200 | 71 |
| 3 | Allen, Paul Gardner | 28200 | 48 |
| 4 | Ellison, Lawrence Joseph | 21900 | 57 |
| 5 | Walton, Alice L. | 17500 | 52 |
| 5 | Walton, Helen R. | 17500 | 82 |
| 5 | Walton, Jim C. | 17500 | 53 |
| 5 | Walton, John T. | 17500 | 55 |
| 5 | Walton, S. Robson | 17500 | 57 |
| 10 | Ballmer, Steven Anthony | 15100 | 45 |
| 11 | Anthony, Barbara Cox | 11300 | 78 |
| 11 | Chambers, Anne Cox | 11300 | 81 |
| 13 | Kluge, John Werner | 10600 | 87 |
| 14 | Redstone, Sumner M. | 10100 | 78 |
| 15 | Dell, Michael | 9800 | 36 |
| 16 | Anschutz, Philip F. | 9600 | 61 |
| 17 | Johnson, Abigail | 9100 | 39 |
| 18 | Mars, Forrest Edward Jr. | 9000 | 70 |
| 18 | Mars, Jacqueline Badger | 9000 | 62 |
| 18 | Mars, John Franklyn | 9000 | 65 |
| 21 | Murdoch, Keith Rupert | 7500 | 70 |
| 22 | Ergen, Charles | 7100 | 48 |
| 23 | Soros, George | 6900 | 71 |
| 24 | Bronfman, Edgar M. Sr. | 6800 | 72 |
| 25 | Turner, Robert E. (Ted) | 6200 | 62 |
| 26 | Broad, Eli | 5500 | 68 |
| 26 | Pritzker, Robert Alan | 5500 | 75 |
| 26 | Pritzker, Thomas J. | 5500 | 51 |
| 29 | Kerkorian, Kirk | 5300 | 84 |
| 29 | Moore, Gordon Earle | 5300 | 72 |
| 31 | Icahn, Carl | 5000 | 65 |
| 31 | Newhouse, Donald Edward | 5000 | 71 |
| 31 | Newhouse, Samuel Irving Jr. | 5000 | 73 |
| 34 | Knight, Philip H. | 4900 | 63 |
| 34 | Lerner, Alfred | 4900 | 68 |
| 36 | Arison, Micky | 4600 | 52 |
| 36 | Goodnight, James | 4600 | 58 |
| 36 | Johnson, Edward Crosby III | 4600 | 71 |
| 36 | Omidyar, Pierre M. | 4600 | 33 |
| 40 | Davis, Marvin H. | 4500 | 76 |
| 40 | Johnson, Samuel Curtis | 4500 | 73 |
| 42 | Annenberg, Walter Hubert | 4000 | 93 |
| 42 | Bloomberg, Michael Rubens | 4000 | 59 |
| 42 | Bren, Donald L. | 4000 | 69 |
| 42 | Schwab, Charles R. | 4000 | 64 |
| 42 | Warner, H. Ty | 4000 | 57 |
| 47 | Geffen, David | 3900 | 58 |
| 47 | Greenberg, Maurice "Hank" | 3900 | 76 |
| 47 | Perot, Henry Ross | 3900 | 71 |
| 50 | Huntsman, Jon Meade | 3800 | 64 |

Age variable sorted in ascending order

| age | Freq. | Percent | Cum. |
|---|---|---|---|
| 33 | 1 | 2.00 | 2.00 |
| 36 | 1 | 2.00 | 4.00 |
| 39 | 1 | 2.00 | 6.00 |
| 45 | 2 | 4.00 | 10.00 |
| 48 | 2 | 4.00 | 14.00 |
| 51 | 1 | 2.00 | 16.00 |
| 52 | 2 | 4.00 | 20.00 |
| 53 | 1 | 2.00 | 22.00 |
| 55 | 1 | 2.00 | 24.00 |
| 57 | 3 | 6.00 | 30.00 |
| 58 | 2 | 4.00 | 34.00 |
| 59 | 1 | 2.00 | 36.00 |
| 61 | 1 | 2.00 | 38.00 |
| 62 | 2 | 4.00 | 42.00 |
| 63 | 1 | 2.00 | 44.00 |
| 64 | 2 | 4.00 | 48.00 |
| 65 | 2 | 4.00 | 52.00 |
| 68 | 2 | 4.00 | 56.00 |
| 69 | 1 | 2.00 | 58.00 |
| 70 | 2 | 4.00 | 62.00 |
| 71 | 5 | 10.00 | 72.00 |
| 72 | 2 | 4.00 | 76.00 |
| 73 | 2 | 4.00 | 80.00 |
| 75 | 1 | 2.00 | 82.00 |
| 76 | 2 | 4.00 | 86.00 |
| 78 | 2 | 4.00 | 90.00 |
| 81 | 1 | 2.00 | 92.00 |
| 82 | 1 | 2.00 | 94.00 |
| 84 | 1 | 2.00 | 96.00 |
| 87 | 1 | 2.00 | 98.00 |
| 93 | 1 | 2.00 | 100.00 |
| Total | 50 | 100.00 | |

Selected Intervals of 6 years and recalculated proportion (percentage)

| | | |
|---|---|---|
| 33-38 | 2 | .04 (4%) |
| 39-44 | 1 | .02 (2%) |
| 45-50 | 4 | .08 (8%) |
| 51-56 | 5 | .10 (10%) |
| 57-62 | 9 | .18 (18%) |
| 63-68 | 7 | .14 (14%) |
| 69-74 | 12 | .24 (24%) |
| 75-80 | 5 | .10 (10%) |
| 81-86 | 3 | .06 (6%) |
| 87-92 | 1 | .02 (2%) |
| 93-99 | 1 | .02 (2%) |

What would a proper histogram look like? (see Figure 1)

Suppose we wanted to reduce the number of intervals

| | | |
|---|---|---|
| 33-38 | 2 | .04 |
| 39-44 | 1 | .02 |
| 45-50 | 4 | .08 |
| 51-56 | 5 | .10 |
| 57-62 | 9 | .18 |
| 63-68 | 7 | .14 |
| 69-74 | 12 | .24 |
| 75-80 | 5 | .10 |
| 81-86 | 3 | .06 |
| 87-99 | 2 | .04 |

Now what would a proper histogram look like? The most common error would be an attempt to graph a number instead of the proper area (Figure 2). If you were to insist on an unequal interval, keep the total area in mind (Figure 3). See why equal intervals are the best choice?

Or suppose we wanted to "spread out" the 69-74 interval?

| | | |
|---|---|---|
| 33-38 | 2 | .04 |
| 39-44 | 1 | .02 |
| 45-50 | 4 | .08 |
| 51-56 | 5 | .10 |
| 57-62 | 9 | .18 |
| 63-68 | 7 | .14 |
| 69-70 | 3 | .06 |
| 71-72 | 7 | .14 |
| 73-74 | 2 | .04 |
| 75-80 | 5 | .10 |
| 81-86 | 3 | .06 |
| 87-92 | 1 | .02 |
| 93-99 | 1 | .02 |

Again, a common problem (Figure 4) and a solution (Figure 5)

Keep in mind that the goal of the histogram is to present percentage by area and not just graphing numbers.

Key ideas

Keep the intervals equal if possible

If not possible, keep in mind that it is deceptive to fail to consider area as the proper representation of relative frequency.

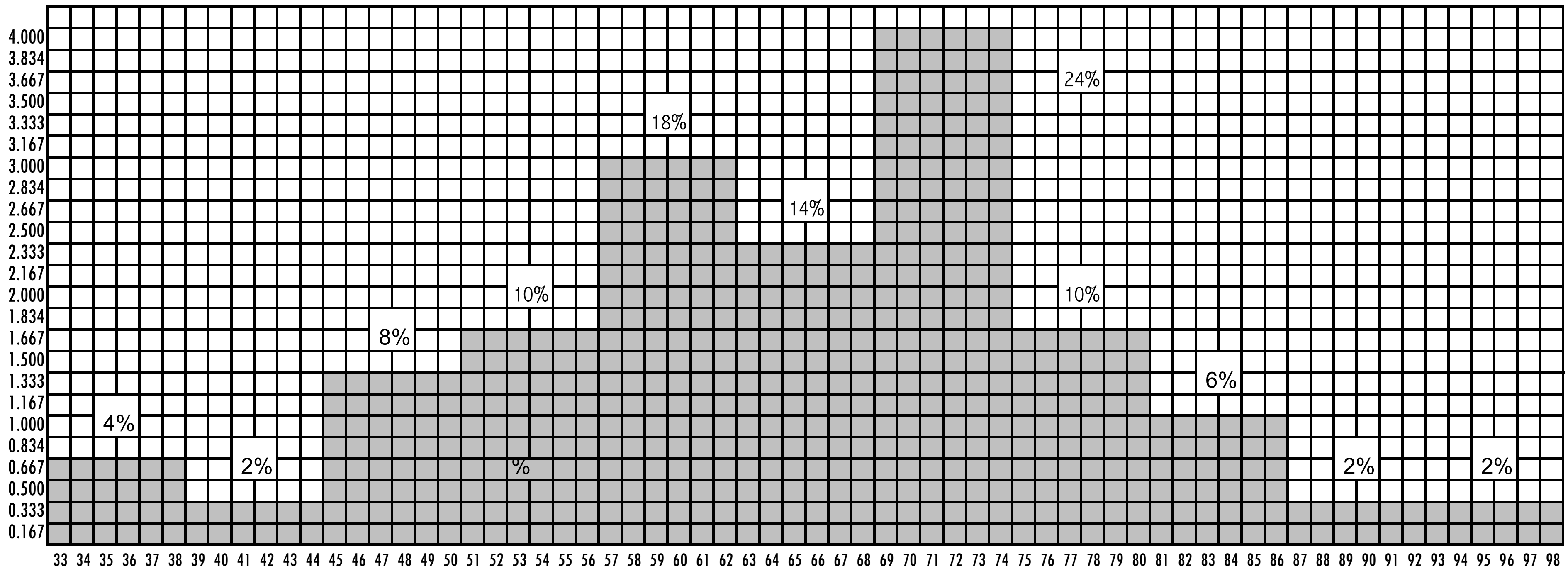


Figure 1. A Proper Histogram

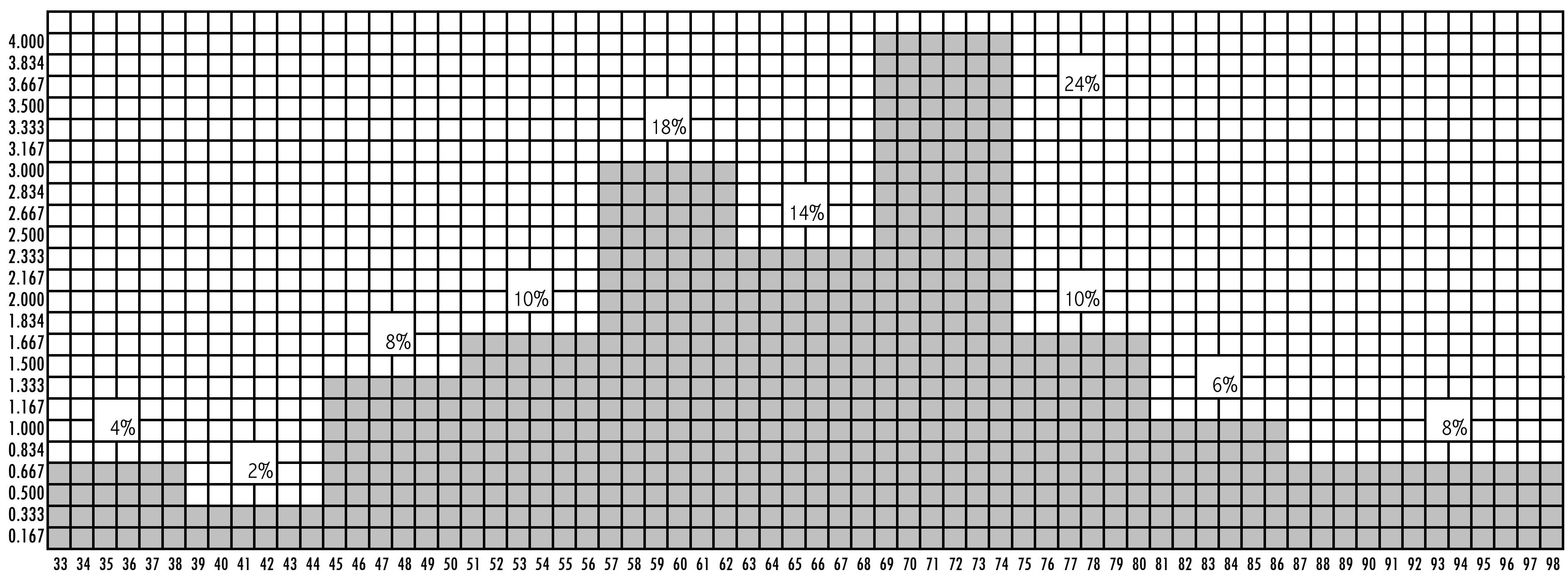


Figure 2. A bad attempt to reduce intervals. The total area here is greater than 100%

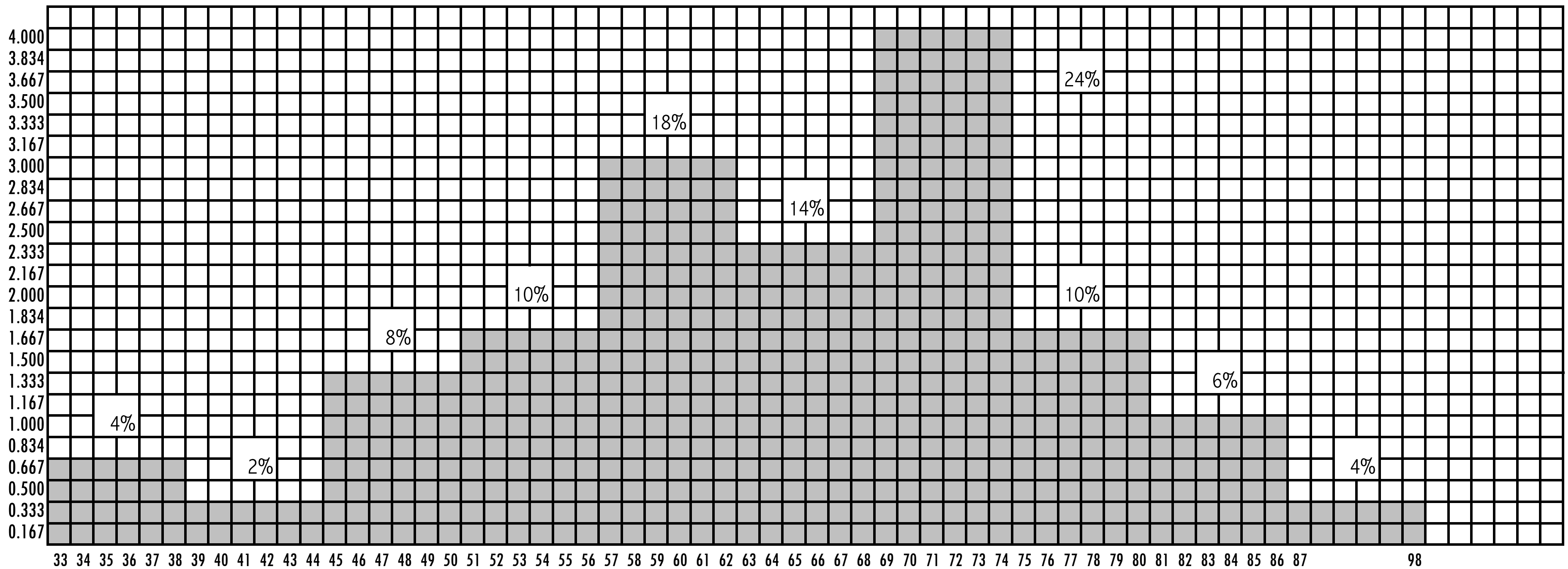


Figure 3. An attempt to correct Figure 2. While correct in area, it shows why equal intervals are preferred

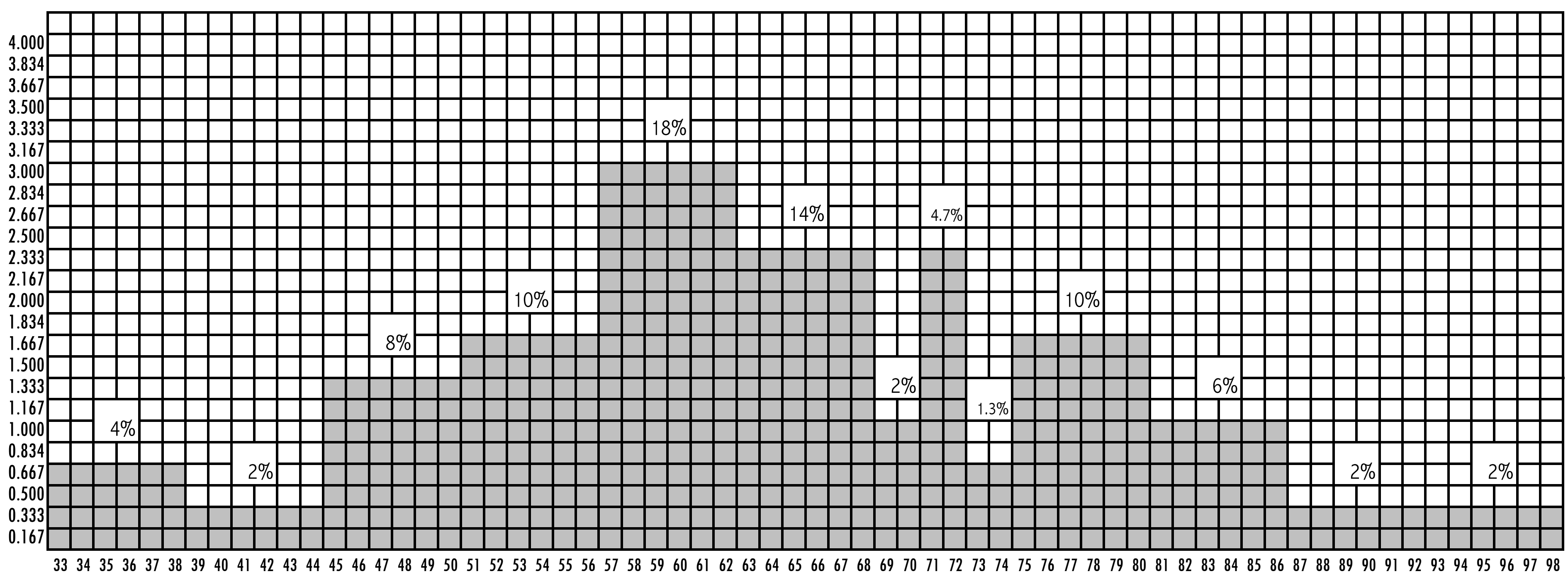


Figure 4. A bad attempt top draw a histogram with narrower intervals in the 69-74 range total < 100%

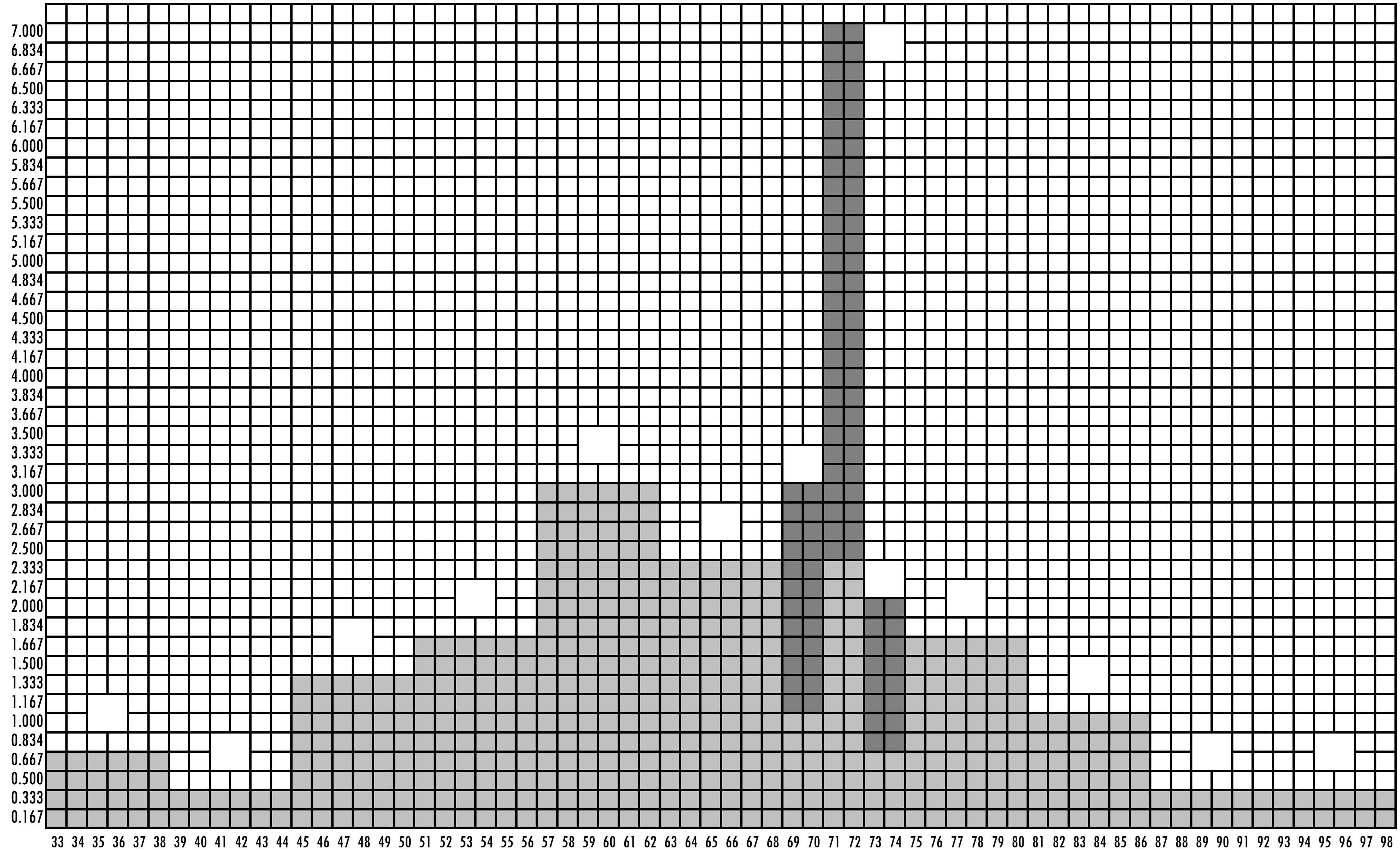

Figure 5. A solution, if the interval is 1/3 the width it should be 3 times taller to properly represent area