| A | B | C <br> Median Mean | D | E | F | G | H | 1 | 1 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| INPUTS | 50 |  | Assume that Households are distributed log-normally by income. It follows that total income is also distributed log-normally. |  |  |  |  |  | 2 |
|  | 80 |  |  |  |  |  |  |  | 3 |
| OUTPUT | 0.507 | Gini Coefficient |  |  |  |  |  |  | 5 |
|  | 0.686 | Pctg of Tot Income that goes to those Below Ave |  |  |  |  |  |  | 6 |
|  |  |  |  |  |  |  |  |  | 7 |
|  |  |  |  |  |  |  |  |  | 8 |
| Table 1 : Sort by Percentile: Bottom-up percentiles on left (A-C); Top-down on the right (E-G) |  |  |  |  |  |  |  |  | 9 |
| Cell | ID | Definition |  |  |  |  |  |  | 10 |
| A25 | \%\#Up | X: The percentile of subjects by income |  |  |  |  |  |  | 11 |
| B25 | \$Cutoff\# | The income needed for a subject to be at the Xth percentile by income |  |  |  |  |  |  | 12 |
| C25 | \%\$Up | The percentage of total income earned by subjects having an income below the cut |  |  |  |  |  |  | 13 |
|  |  |  |  |  |  |  |  |  | 14 |
| E25 | \%\#down | Y: The percentage of subjects having incomes above the cutoff. |  |  |  |  |  |  | 15 |
| F25 | \%\$down | Percentage of total income earned by the top Y percentage of subjects by income |  |  |  |  |  |  | 16 |
| G25 | Iown:\%\$ / \% | TimesEqu | IShare: Top | -down rati | o of cumul | lative pctg of incom |  | mul. pctg. of s | 17 |
| H25 | Ave\$ | The average income of subjects in the top $Y$ percentage of subjects by income |  |  |  |  |  |  | 18 |
| 126 | /\$Cutoff\# | Ratio: Average income above the Xth percentile to Cutoff income at the Xth percent |  |  |  |  |  |  | 19 |
|  |  |  |  |  |  |  |  |  | 20 |
|  |  |  |  |  |  |  |  |  | 21 |
| A | B | C | D | E | F | G | H | 1 | 22 |
| ----------BOTTOM-UP--------- |  |  | Table 1 | ---TOP_DOWN--- Times=Share: |  |  | Above | AboveAve\$ | 23 |
| \%\#Up | \$Cutoff\# | \%\$Up |  | \%\#down | \%\$down | Down:\%\$/\%\# | Ave\$ | /\$Cutoff\# | 24 |
| 0\% | 0.0 | 0.00\% |  | 100\% | 100.0\% | 1.0 | 80 |  | 25 |
| 10\% | 14.4 | 1.22\% |  | 90\% | 98.8\% | 1.1 | 88 | 6.1 | 26 |
| 20\% | 22.1 | 3.51\% |  | 80\% | 96.5\% | 1.2 | 96 | 4.4 | 27 |
| 30\% | 30.1 | 6.76\% |  | 70\% | 93.2\% | 1.3 | 107 | 3.5 | 28 |
| 40\% | 39.1 | 11.07\% |  | 60\% | 88.9\% | 1.5 | 119 | 3.0 | 29 |
| 50\% | 50.0 | 16.61\% |  | 50\% | 83.4\% | 1.7 | 133 | 2.7 | 30 |
| 60\% | 63.9 | 23.69\% |  | 40\% | 76.3\% | 1.9 | 153 | 2.4 | 31 |
| 70\% | 83.1 | 32.81\% |  | 30\% | 67.2\% | 2.2 | 179 | 2.2 | 32 |
| 75\% | 96.2 | 38.40\% |  | 25\% | 61.6\% | 2.5 | 197 | 2.1 | 33 |
| 80\% | 113.1 | 44.91\% |  | 20\% | 55.1\% | 2.8 | 220 | 1.9 | 34 |
| 85\% | 136.6 | 52.67\% |  | 15\% | 47.3\% | 3.2 | 252 | 1.8 | 35 |
| 90\% | 173.2 | 62.25\% |  | 10\% | 37.8\% | 3.8 | 302 | 1.7 | 36 |
| 95\% | 246.4 | 75.03\% |  | 5\% | 25.0\% | 5.0 | 400 | 1.6 | 37 |
| 98\% | 366.2 | 86.09\% |  | 2\% | 13.9\% | 7.0 | 557 | 1.5 | 38 |
| 99\% | 477.0 | 91.26\% |  | 1\% | 8.7\% | 8.7 | 699 | 1.5 | 39 |
| 99.5\% | 607.5 | 94.59\% |  | 0.5\% | 5.4\% | 10.8 | 866 | 1.4 | 40 |
| 99.9\% | 1,000.4 | 98.30\% |  | 0.1\% | 1.7\% | 17.0 | 1,358 | 1.4 | 41 |
| 99.95\% | 1,214.8 | 98.99\% |  | 0.05\% | 1.0\% | 20.3 | 1,623 | 1.3 | 42 |
| 99.99\% | 1,840.4 | 99.70\% |  | 0.01\% | 0.3\% | 29.8 | 2,388 | 1.3 | 43 |
| Copy of output at www.statlit.org/pdf/2014-Schield-LogNormal-Income2B-Excel2013-Demo.pdf |  |  |  |  |  |  |  |  | 44 |
|  |  |  |  |  |  |  |  |  | 45 |
|  |  |  |  |  |  |  |  |  | 46 |
|  |  |  |  |  |  |  |  |  | 47 |
| Table 2 : Sorted by Income |  |  |  | Ignore columns B \& C, and F, G \& H. |  |  |  |  | 48 |
| A55 | Income | $X$ : The income (in \$1,000) |  |  |  |  |  |  | 49 |
| D55 | CDF\# | The percentage of subjects that have incomes BELOW $X$ |  |  |  |  |  |  | 50 |
| 155 | CDF\$ | The percentage of total income that is earned by subjects having incomes BELOW |  |  |  |  |  |  | 51 |
| A | B | C | D | E | F | G | H | I | 52 |

Table 2 Distribution of Subjects by Income

| Income | PDF\# | \% of mode | CDF\# |
| :---: | :---: | :---: | :---: |
| 1 | 1.20E-04 | 0.91\% | 0.00\% |
| 5 | $4.90 \mathrm{E}-03$ | 37.25\% | 0.88\% |
| 10 | $1.04 \mathrm{E}-02$ | 78.79\% | 4.85\% |
| 15 | 1.27E-02 | 96.36\% | 10.72\% |
| 20 | 1.32E-02 | 99.97\% | 17.23\% |
| 25 | 1.27E-02 | 96.81\% | 23.73\% |
| 30 | 1.19E-02 | 90.67\% | 29.91\% |
| 35 | 1.10E-02 | 83.44\% | 35.65\% |
| 40 | $1.00 \mathrm{E}-02$ | 76.08\% | 40.90\% |
| 45 | 9.09E-03 | 69.04\% | 45.67\% |
| 50 | 8.23E-03 | 62.50\% | 50.00\% |
| 55 | 7.45E-03 | 56.54\% | 53.92\% |
| 60 | $6.74 \mathrm{E}-03$ | 51.17\% | 57.46\% |
| 65 | 6.10E-03 | 46.35\% | 60.67\% |
| 70 | 5.53E-03 | 42.03\% | 63.57\% |
| 75 | 5.03E-03 | 38.18\% | 66.21\% |
| 80 | 4.57E-03 | 34.73\% | 68.61\% |
| 85 | 4.17E-03 | 31.65\% | 70.79\% |
| 90 | 3.80E-03 | 28.89\% | 72.78\% |
| 95 | $3.48 \mathrm{E}-03$ | 26.42\% | 74.60\% |
| 100 | 3.19E-03 | 24.20\% | 76.27\% |
| 110 | 2.69E-03 | 20.41\% | 79.20\% |
| 120 | 2.28E-03 | 17.32\% | 81.67\% |
| 130 | 1.95E-03 | 14.79\% | 83.78\% |
| 140 | $1.67 \mathrm{E}-03$ | 12.70\% | 85.59\% |
| 150 | $1.44 \mathrm{E}-03$ | 10.96\% | 87.14\% |
| 160 | $1.25 \mathrm{E}-03$ | 9.51\% | 88.49\% |
| 170 | $1.09 \mathrm{E}-03$ | 8.29\% | 89.66\% |
| 180 | 9.55E-04 | 7.25\% | 90.68\% |
| 190 | 8.39E-04 | 6.37\% | 91.57\% |
| 200 | 7.40E-04 | 5.62\% | 92.36\% |
| 220 | $5.82 \mathrm{E}-04$ | 4.42\% | 93.68\% |
| 240 | 4.63E-04 | 3.52\% | 94.72\% |
| 260 | 3.73E-04 | 2.83\% | 95.55\% |
| 280 | 3.03E-04 | 2.30\% | 96.22\% |
| 300 | $2.49 \mathrm{E}-04$ | 1.89\% | 96.77\% |
| 320 | 2.06E-04 | 1.56\% | 97.22\% |
| 340 | 1.71E-04 | 1.30\% | 97.60\% |
| 350 | 1.57E-04 | 1.19\% | 97.76\% |
| 400 | 1.03E-04 | 0.78\% | 98.40\% |
| 500 | 4.90E-05 | 0.37\% | 99.12\% |
| 800 | 8.62E-06 | 0.07\% | 99.79\% |
| 1,000 | 3.48E-06 | 0.03\% | 99.90\% |
| 2,000 | $1.48 \mathrm{E}-07$ | 0.00\% | 99.99\% |
| 5,000 | 1.04E-09 | 0.00\% | 100.00\% |
| 10,000 | 1.35E-11 | 0.00\% | 100.00\% |
| 50,000 | 7.81E-17 | 0.00\% | 100.00\% |
| 100,000 | 1.85E-19 | 0.00\% | 100.00\% |

Sample questions (with answers):

Distribution of Total Income by Amount
53

| PDF\$ | \% of \$mode | \%of\#mode | CDF\$ |
| :---: | :---: | :---: | :---: |
| 1.50E-06 | 0.03\% | 0.01\% | 0.00\% |
| 3.07E-04 | 5.96\% | 2.33\% | 0.04\% |
| 1.30E-03 | 25.21\% | 9.85\% | 0.43\% |
| 2.38E-03 | 46.25\% | 18.07\% | 1.35\% |
| 3.29E-03 | 63.98\% | 24.99\% | 2.78\% |
| 3.98E-03 | 77.45\% | 30.25\% | 4.60\% |
| $4.48 \mathrm{E}-03$ | 87.04\% | 34.00\% | 6.73\% |
| 4.81E-03 | 93.46\% | 36.51\% | 9.05\% |
| 5.01E-03 | 97.39\% | 38.04\% | 11.51\% |
| 5.11E-03 | 99.41\% | 38.83\% | 14.05\% |
| 5.14E-03 | 100.00\% | 39.06\% | 16.61\% |
| 5.12E-03 | 99.52\% | 38.87\% | 19.18\% |
| 5.05E-03 | 98.25\% | 38.38\% | 21.73\% |
| 4.96E-03 | 96.40\% | 37.66\% | 24.23\% |
| 4.84E-03 | 94.16\% | 36.78\% | 26.68\% |
| 4.71E-03 | 91.63\% | 35.79\% | 29.07\% |
| 4.57E-03 | 88.91\% | 34.73\% | 31.39\% |
| 4.43E-03 | 86.09\% | 33.63\% | 33.64\% |
| 4.28E-03 | 83.21\% | 32.50\% | 35.82\% |
| 4.13E-03 | 80.32\% | 31.38\% | 37.92\% |
| 3.98E-03 | 77.45\% | 30.25\% | 39.95\% |
| 3.70E-03 | 71.84\% | 28.06\% | 43.79\% |
| 3.42E-03 | 66.52\% | 25.98\% | 47.35\% |
| 3.16E-03 | 61.53\% | 24.04\% | 50.64\% |
| 2.93E-03 | 56.90\% | 22.23\% | 53.68\% |
| 2.71E-03 | 52.62\% | 20.56\% | 56.50\% |
| 2.50E-03 | 48.69\% | 19.02\% | 59.10\% |
| 2.32E-03 | 45.09\% | 17.61\% | 61.51\% |
| 2.15E-03 | 41.78\% | 16.32\% | 63.74\% |
| 1.99E-03 | 38.75\% | 15.14\% | 65.81\% |
| 1.85E-03 | 35.98\% | 14.05\% | 67.74\% |
| $1.60 \mathrm{E}-03$ | 31.11\% | 12.15\% | 71.18\% |
| 1.39E-03 | 27.01\% | 10.55\% | 74.16\% |
| 1.21E-03 | 23.56\% | 9.20\% | 76.76\% |
| 1.06E-03 | 20.62\% | 8.06\% | 79.03\% |
| 9.32E-04 | 18.13\% | 7.08\% | 81.02\% |
| 8.23E-04 | 16.00\% | 6.25\% | 82.77\% |
| 7.28E-04 | 14.16\% | 5.53\% | 84.32\% |
| 6.86E-04 | 13.34\% | 5.21\% | 85.02\% |
| 5.16E-04 | 10.03\% | 3.92\% | 88.00\% |
| 3.07E-04 | 5.96\% | 2.33\% | 92.00\% |
| 8.619E-05 | 1.68\% | 0.65\% | 97.06\% |
| 4.346E-05 | 0.85\% | 0.33\% | 98.30\% |
| 3.696E-06 | 0.07\% | 0.03\% | 99.77\% |
| 6.489E-08 | 0.00\% | 0.00\% | 99.99\% |
| 1.68E-09 | 0.00\% | 0.00\% | 100.00\% |
| 4.88E-14 | 0.00\% | 0.00\% | 100.00\% |
| 2.32E-16 | 0.00\% | 0.00\% | 100.00\% |

