In[49]:=
```
ClearAll;
II3[yy2_] := Integrate[Sin[x], {x, 0, yy2}];
II4[yy2_] := Integrate[Sin[x], {x, yy2 - π/24, yy2}];
II5 = Integrate[Sin[x], {x, 11 π/24, 12 π/24}] * (2^16) * 1.0;
II9 = Table[{
    (yy * 24)/π, yy,
    II3[yy],
    Round[1000 * II3[yy]] / 1000.0,
    Round[1000 * II4[yy]] / 1000.0,
    Round[II3[yy] * (2^8)],
    Round[II3[yy] * (2^10)],
    Round[II3[yy] * (2^12)],
    Round[II3[yy] * (2^16)],
    Round[II4[yy] * (2^16)],
    N[II4[yy] * (2^16) / II5, 3],
    Round[II4[yy] * (2^16) / II5 * (2^16)]

   }, {yy, 1/24 π, π/2, 1/24 π}];
II0 = Table[{
    yy * 24 / π,
    Round[II4[yy] * (2^16) / II5 * (2^16)]

   }, {yy, 1/24 π, 2 π, 1/24 π}];
II9 // MatrixForm
II0 // MatrixForm
ListPlot[II0, Filling -> Axis, FillingStyle → Black]
```

Out[55]//MatrixForm=

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | $\frac{\pi}{24}$ | $1-\text{Cos}\left[\frac{\pi}{24}\right]$ | 0.009 | 0.009 | 2 | 9 | 35 | 561 | 561 | 0.0655435 | 4295 |
| 2 | $\frac{\pi}{12}$ | $1-\frac{1+\sqrt{3}}{2\sqrt{2}}$ | 0.034 | 0.026 | 9 | 35 | 140 | 2233 | 1672 | 0.195509 | 12 813 |
| 3 | $\frac{\pi}{8}$ | $1-\text{Cos}\left[\frac{\pi}{8}\right]$ | 0.076 | 0.042 | 19 | 78 | 312 | 4989 | 2756 | 0.322129 | 21 111 |
| 4 | $\frac{\pi}{6}$ | $1-\frac{\sqrt{3}}{2}$ | 0.134 | 0.058 | 34 | 137 | 549 | 8780 | 3792 | 0.443238 | 29 048 |
| 5 | $\frac{5\pi}{24}$ | $1-\text{Cos}\left[\frac{5\pi}{24}\right]$ | 0.207 | 0.073 | 53 | 212 | 846 | 13 543 | 4763 | 0.556762 | 36 488 |
| 6 | $\frac{\pi}{4}$ | $1-\frac{1}{\sqrt{2}}$ | 0.293 | 0.086 | 75 | 300 | 1200 | 19 195 | 5652 | 0.660761 | 43 304 |
| 7 | $\frac{7\pi}{24}$ | $1-\text{Sin}\left[\frac{5\pi}{24}\right]$ | 0.391 | 0.098 | 100 | 401 | 1603 | 25 640 | 6445 | 0.753453 | 49 378 |
| 8 | $\frac{\pi}{3}$ | $\frac{1}{2}$ | 0.5 | 0.109 | 128 | 512 | 2048 | 32 768 | 7128 | 0.833254 | 54 608 |
| 9 | $\frac{3\pi}{8}$ | $1-\text{Sin}\left[\frac{\pi}{8}\right]$ | 0.617 | 0.117 | 158 | 632 | 2529 | 40 456 | 7688 | 0.898797 | 58 904 |
| 10 | $\frac{5\pi}{12}$ | $\frac{1}{4}\left(4+\sqrt{2}-\sqrt{6}\right)$ | 0.741 | 0.124 | 190 | 759 | 3036 | 48 574 | 8118 | 0.948962 | 62 191 |
| 11 | $\frac{11\pi}{24}$ | $1-\text{Sin}\left[\frac{\pi}{24}\right]$ | 0.869 | 0.128 | 223 | 890 | 3561 | 56 982 | 8408 | 0.98289 | 64 415 |
| 12 | $\frac{\pi}{2}$ | 1 | 1. | 0.131 | 256 | 1024 | 4096 | 65 536 | 8554 | 1. | 65 536 |

Out[56]//MatrixForm=

| | |
|---|---|
| 1 | 4295 |
| 2 | 12 813 |
| 3 | 21 111 |
| 4 | 29 048 |
| 5 | 36 488 |
| 6 | 43 304 |
| 7 | 49 378 |
| 8 | 54 608 |
| 9 | 58 904 |
| 10 | 62 191 |
| 11 | 64 415 |
| 12 | 65 536 |
| 13 | 65 536 |
| 14 | 64 415 |
| 15 | 62 191 |
| 16 | 58 904 |
| 17 | 54 608 |
| 18 | 49 378 |
| 19 | 43 304 |
| 20 | 36 488 |
| 21 | 29 048 |
| 22 | 21 111 |
| 23 | 12 813 |
| 24 | 4295 |
| 25 | −4295 |
| 26 | −12 813 |
| 27 | −21 111 |
| 28 | −29 048 |
| 29 | −36 488 |
| 30 | −43 304 |
| 31 | −49 378 |
| 32 | −54 608 |
| 33 | −58 904 |
| 34 | −62 191 |
| 35 | −64 415 |
| 36 | −65 536 |
| 37 | −65 536 |
| 38 | −64 415 |
| 39 | −62 191 |
| 40 | −58 904 |
| 41 | −54 608 |
| 42 | −49 378 |
| 43 | −43 304 |
| 44 | −36 488 |
| 45 | −29 048 |
| 46 | −21 111 |
| 47 | −12 813 |
| 48 | −4295 |

Out[57]=