

```

In[177]:= ClearAll;

II1[pp_] := Integrate[Sin[x], {x,  $\frac{(\frac{pp}{2} - 1)\pi}{pp}$ ,  $\frac{\frac{pp}{2}\pi}{pp}$ }] * 1.0;

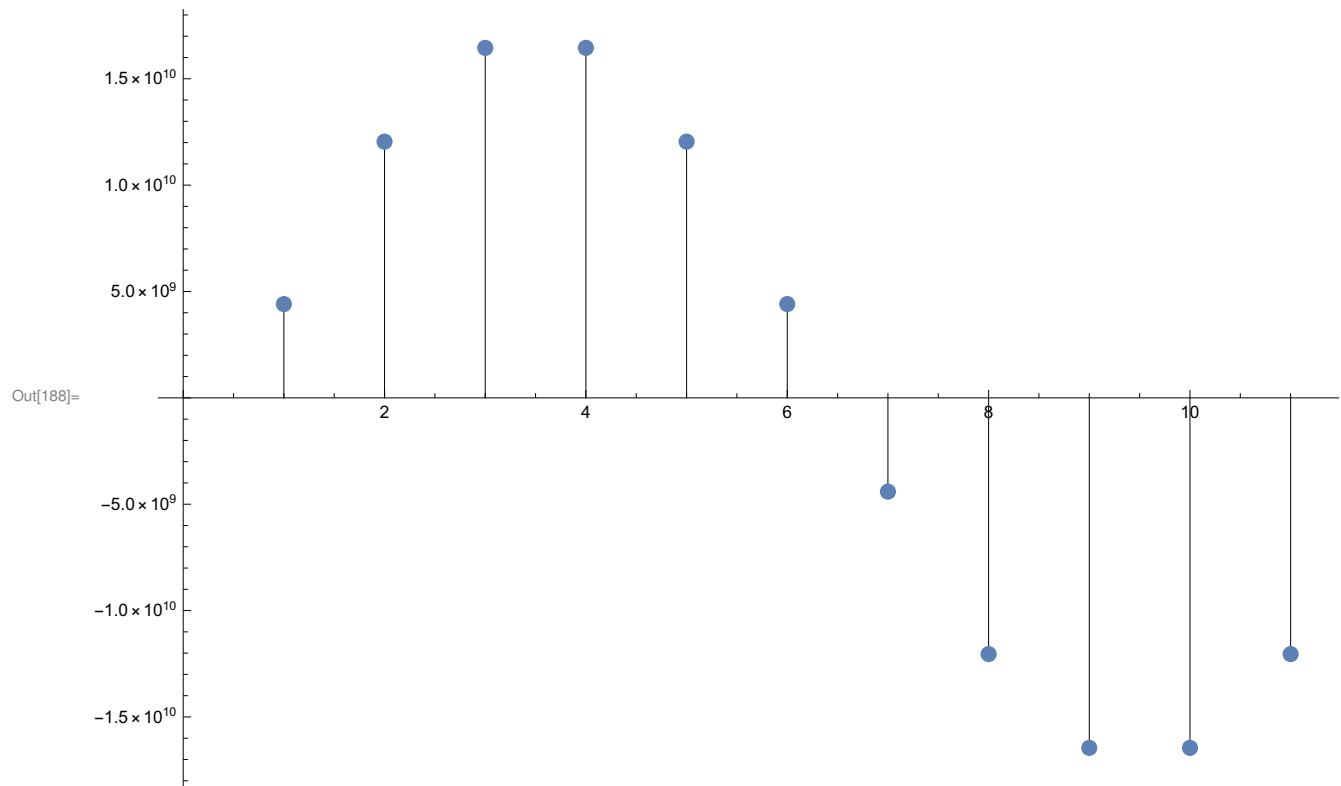
II11 = II1[6];
II12 = II1[24];
II3[yy2_] := Integrate[Sin[x], {x, 0, yy2}];
II4[yy2_, pp1_] := Integrate[Sin[x], {x, yy2 -  $\frac{\pi}{pp1}$ , yy2}];
II51[yy3_, pp4_] := {
  yy3 * pp4 /  $\pi$ ,
  Round[II4[yy3, pp4] * (2^16) / II12 * (2^16)]
};
II52[yy3_, pp4_] := {
  yy3 * pp4 /  $\pi$ ,
  yy3,
  Round[II3[yy3] * 1000] / 1000.0,
  Round[II4[yy3, pp4] * 1000] / 1000.0,
  Round[II3[yy3] * (2^16)],
  Round[II4[yy3, pp4] * (2^16)],
  II1[pp4],
  Round[(II4[yy3, pp4]) * 1000] / 1000.0,
  Round[(II4[yy3, pp4]) / II1[pp4] * 1000] / 1000.0,
  Round[(II4[yy3, pp4]) / II1[pp4] * (2^16)]
};
II61[pp3_] := Table[II51[yy, pp3], {yy,  $\frac{1}{pp3}\pi$ , 2  $\pi$ ,  $\frac{1}{pp3}\pi$ )];
II62[pp3_] := Table[II52[yy, pp3], {yy,  $\frac{1}{pp3}\pi$ , 2  $\pi$ ,  $\frac{1}{pp3}\pi$ )];

II62[6] // MatrixForm
ListPlot[II61[6], Filling -> Axis, FillingStyle -> Black]
II62[12] // MatrixForm
ListPlot[II61[12], Filling -> Axis, FillingStyle -> Black]
II62[24] // MatrixForm
ListPlot[II61[24], Filling -> Axis, FillingStyle -> Black]

```

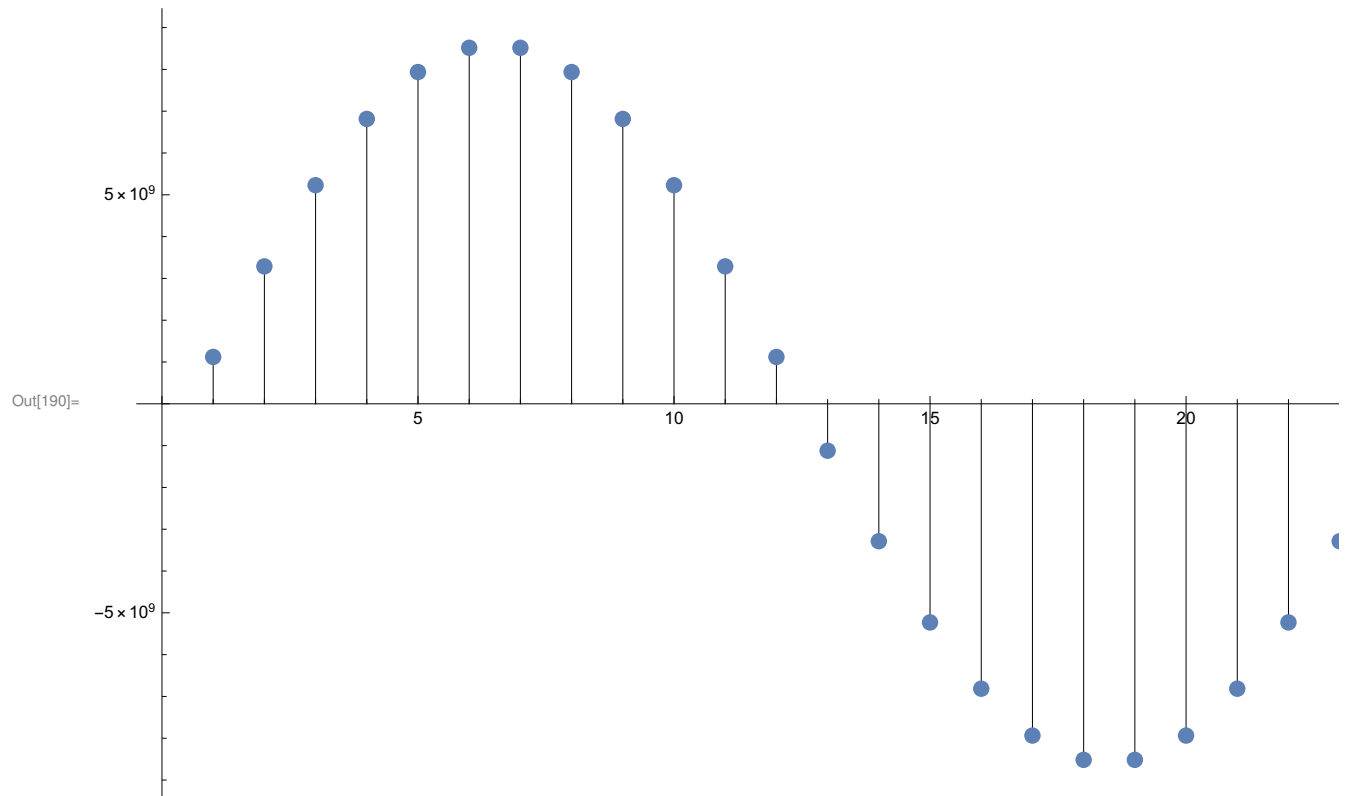
Out[187]//MatrixForm=

1	$\frac{\pi}{6}$	0.134	0.134	8780	8780	0.5	0.134	0.268	17 560
2	$\frac{\pi}{3}$	0.5	0.366	32 768	23 988	0.5	0.366	0.732	47 976
3	$\frac{\pi}{2}$	1.	0.5	65 536	32 768	0.5	0.5	1.	65 536
4	$\frac{2\pi}{3}$	1.5	0.5	98 304	32 768	0.5	0.5	1.	65 536
5	$\frac{5\pi}{6}$	1.866	0.366	122 292	23 988	0.5	0.366	0.732	47 976
6	π	2.	0.134	131 072	8780	0.5	0.134	0.268	17 560
7	$\frac{7\pi}{6}$	1.866	-0.134	122 292	-8780	0.5	-0.134	-0.268	-17 560
8	$\frac{4\pi}{3}$	1.5	-0.366	98 304	-23 988	0.5	-0.366	-0.732	-47 976
9	$\frac{3\pi}{2}$	1.	-0.5	65 536	-32 768	0.5	-0.5	-1.	-65 536
10	$\frac{5\pi}{3}$	0.5	-0.5	32 768	-32 768	0.5	-0.5	-1.	-65 536
11	$\frac{11\pi}{6}$	0.134	-0.366	8780	-23 988	0.5	-0.366	-0.732	-47 976
12	2π	0.	-0.134	0	-8780	0.5	-0.134	-0.268	-17 560



Out[189]/MatrixForm=

1	$\frac{\pi}{12}$	0.034	0.034	2233	2233	0.258819	0.034	0.132	8628
2	$\frac{\pi}{6}$	0.134	0.1	8780	6547	0.258819	0.1	0.386	25296
3	$\frac{\pi}{4}$	0.293	0.159	19195	10415	0.258819	0.159	0.614	40240
4	$\frac{\pi}{3}$	0.5	0.207	32768	13573	0.258819	0.207	0.8	52442
5	$\frac{5\pi}{12}$	0.741	0.241	48574	15806	0.258819	0.241	0.932	61070
6	$\frac{\pi}{2}$	1.	0.259	65536	16962	0.258819	0.259	1.	65536
7	$\frac{7\pi}{12}$	1.259	0.259	82498	16962	0.258819	0.259	1.	65536
8	$\frac{2\pi}{3}$	1.5	0.241	98304	15806	0.258819	0.241	0.932	61070
9	$\frac{3\pi}{4}$	1.707	0.207	111877	13573	0.258819	0.207	0.8	52442
10	$\frac{5\pi}{6}$	1.866	0.159	122292	10415	0.258819	0.159	0.614	40240
11	$\frac{11\pi}{12}$	1.966	0.1	128839	6547	0.258819	0.1	0.386	25296
12	π	2.	0.034	131072	2233	0.258819	0.034	0.132	8628
13	$\frac{13\pi}{12}$	1.966	-0.034	128839	-2233	0.258819	-0.034	-0.132	-8628
14	$\frac{7\pi}{6}$	1.866	-0.1	122292	-6547	0.258819	-0.1	-0.386	-25296
15	$\frac{5\pi}{4}$	1.707	-0.159	111877	-10415	0.258819	-0.159	-0.614	-40240
16	$\frac{4\pi}{3}$	1.5	-0.207	98304	-13573	0.258819	-0.207	-0.8	-52442
17	$\frac{17\pi}{12}$	1.259	-0.241	82498	-15806	0.258819	-0.241	-0.932	-61070
18	$\frac{3\pi}{2}$	1.	-0.259	65536	-16962	0.258819	-0.259	-1.	-65536
19	$\frac{19\pi}{12}$	0.741	-0.259	48574	-16962	0.258819	-0.259	-1.	-65536
20	$\frac{5\pi}{3}$	0.5	-0.241	32768	-15806	0.258819	-0.241	-0.932	-61070
21	$\frac{7\pi}{4}$	0.293	-0.207	19195	-13573	0.258819	-0.207	-0.8	-52442
22	$\frac{11\pi}{6}$	0.134	-0.159	8780	-10415	0.258819	-0.159	-0.614	-40240
23	$\frac{23\pi}{12}$	0.034	-0.1	2233	-6547	0.258819	-0.1	-0.386	-25296
24	2π	0.	-0.034	0	-2233	0.258819	-0.034	-0.132	-8628



Out[191]/MatrixForm=

1	$\frac{\pi}{24}$	0.009	0.009	561	561	0.130526	0.009	0.066	4295
2	$\frac{\pi}{12}$	0.034	0.026	2233	1672	0.130526	0.026	0.196	12 813
3	$\frac{\pi}{8}$	0.076	0.042	4989	2756	0.130526	0.042	0.322	21 111
4	$\frac{\pi}{6}$	0.134	0.058	8780	3792	0.130526	0.058	0.443	29 048
5	$\frac{5\pi}{24}$	0.207	0.073	13 543	4763	0.130526	0.073	0.557	36 488
6	$\frac{\pi}{4}$	0.293	0.086	19 195	5652	0.130526	0.086	0.661	43 304
7	$\frac{7\pi}{24}$	0.391	0.098	25 640	6445	0.130526	0.098	0.753	49 378
8	$\frac{\pi}{3}$	0.5	0.109	32 768	7128	0.130526	0.109	0.833	54 608
9	$\frac{3\pi}{8}$	0.617	0.117	40 456	7688	0.130526	0.117	0.899	58 904
10	$\frac{5\pi}{12}$	0.741	0.124	48 574	8118	0.130526	0.124	0.949	62 191
11	$\frac{11\pi}{24}$	0.869	0.128	56 982	8408	0.130526	0.128	0.983	64 415
12	$\frac{\pi}{2}$	1.	0.131	65 536	8554	0.130526	0.131	1.	65 536
13	$\frac{13\pi}{24}$	1.131	0.131	74 090	8554	0.130526	0.131	1.	65 536
14	$\frac{7\pi}{12}$	1.259	0.128	82 498	8408	0.130526	0.128	0.983	64 415
15	$\frac{5\pi}{8}$	1.383	0.124	90 616	8118	0.130526	0.124	0.949	62 191
16	$\frac{2\pi}{3}$	1.5	0.117	98 304	7688	0.130526	0.117	0.899	58 904
17	$\frac{17\pi}{24}$	1.609	0.109	105 432	7128	0.130526	0.109	0.833	54 608
18	$\frac{3\pi}{4}$	1.707	0.098	111 877	6445	0.130526	0.098	0.753	49 378
19	$\frac{19\pi}{24}$	1.793	0.086	117 529	5652	0.130526	0.086	0.661	43 304
20	$\frac{5\pi}{4}$	1.866	0.073	122 292	4763	0.130526	0.073	0.557	36 488

21	$\frac{7\pi}{8}$	1.924	0.058	126 083	3792	0.130526	0.058	0.443	29 048
22	$\frac{11\pi}{12}$	1.966	0.042	128 839	2756	0.130526	0.042	0.322	21 111
23	$\frac{23\pi}{24}$	1.991	0.026	130 511	1672	0.130526	0.026	0.196	12 813
24	π	2.	0.009	131 072	561	0.130526	0.009	0.066	4295
25	$\frac{25\pi}{24}$	1.991	-0.009	130 511	-561	0.130526	-0.009	-0.066	-4295
26	$\frac{13\pi}{12}$	1.966	-0.026	128 839	-1672	0.130526	-0.026	-0.196	-12 813
27	$\frac{9\pi}{8}$	1.924	-0.042	126 083	-2756	0.130526	-0.042	-0.322	-21 111
28	$\frac{7\pi}{6}$	1.866	-0.058	122 292	-3792	0.130526	-0.058	-0.443	-29 048
29	$\frac{29\pi}{24}$	1.793	-0.073	117 529	-4763	0.130526	-0.073	-0.557	-36 488
30	$\frac{5\pi}{4}$	1.707	-0.086	111 877	-5652	0.130526	-0.086	-0.661	-43 304
31	$\frac{31\pi}{24}$	1.609	-0.098	105 432	-6445	0.130526	-0.098	-0.753	-49 378
32	$\frac{4\pi}{3}$	1.5	-0.109	98 304	-7128	0.130526	-0.109	-0.833	-54 608
33	$\frac{11\pi}{8}$	1.383	-0.117	90 616	-7688	0.130526	-0.117	-0.899	-58 904
34	$\frac{17\pi}{12}$	1.259	-0.124	82 498	-8118	0.130526	-0.124	-0.949	-62 191
35	$\frac{35\pi}{24}$	1.131	-0.128	74 090	-8408	0.130526	-0.128	-0.983	-64 415
36	$\frac{3\pi}{2}$	1.	-0.131	65 536	-8554	0.130526	-0.131	-1.	-65 536
37	$\frac{37\pi}{24}$	0.869	-0.131	56 982	-8554	0.130526	-0.131	-1.	-65 536
38	$\frac{19\pi}{12}$	0.741	-0.128	48 574	-8408	0.130526	-0.128	-0.983	-64 415
39	$\frac{13\pi}{8}$	0.617	-0.124	40 456	-8118	0.130526	-0.124	-0.949	-62 191
40	$\frac{5\pi}{3}$	0.5	-0.117	32 768	-7688	0.130526	-0.117	-0.899	-58 904
41	$\frac{41\pi}{24}$	0.391	-0.109	25 640	-7128	0.130526	-0.109	-0.833	-54 608
42	$\frac{7\pi}{4}$	0.293	-0.098	19 195	-6445	0.130526	-0.098	-0.753	-49 378
43	$\frac{43\pi}{24}$	0.207	-0.086	13 543	-5652	0.130526	-0.086	-0.661	-43 304
44	$\frac{11\pi}{6}$	0.134	-0.073	8780	-4763	0.130526	-0.073	-0.557	-36 488
45	$\frac{15\pi}{8}$	0.076	-0.058	4989	-3792	0.130526	-0.058	-0.443	-29 048
46	$\frac{23\pi}{12}$	0.034	-0.042	2233	-2756	0.130526	-0.042	-0.322	-21 111
47	$\frac{47\pi}{24}$	0.009	-0.026	561	-1672	0.130526	-0.026	-0.196	-12 813
48	2π	0.	-0.009	0	-561	0.130526	-0.009	-0.066	-4295

