1. Fit the function

$$
y(x) = \begin{cases}
1 + x & \text{when } -1 < x < 0 \\[2mm]
1 & \text{when } 0 < x < 1 \\[2mm]
2 - x & \text{when } 1 < x < 2
\end{cases}
$$

by a trigonometric polynomial up to and including $\sin(7 \cdot \frac{2x-1}{3}\pi)$ and $\cos(7 \cdot \frac{2x-1}{3}\pi)$ in the interval $(-1, 2)$. Display the resulting fit in a graph.

2. Fit the following discrete data

x	0	0.3	0.6	0.9	1.2	1.5	1.8	2.1	2.4	2.7
y	-2.11	-1.68	0.49	0.31	0.44	-0.49	0.28	0.80	-2.38	0.10

3.0	3.3	3.6	3.9	4.2	4.5	4.8	5.1	5.4	5.7
-1.78	-3.35	-1.16	0.98	1.42	1.44	-0.08	1.20	0.51	-2.08

by a trigonometric polynomial having $\cos[3 \cdot (\frac{x}{3} - 1)\pi]$ as its last term. Display the fit.

Repeat with an interpolating trigonometric polynomial.