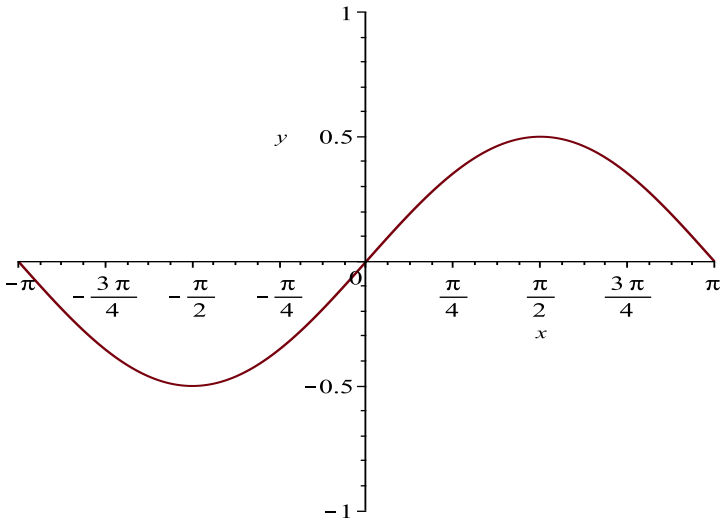
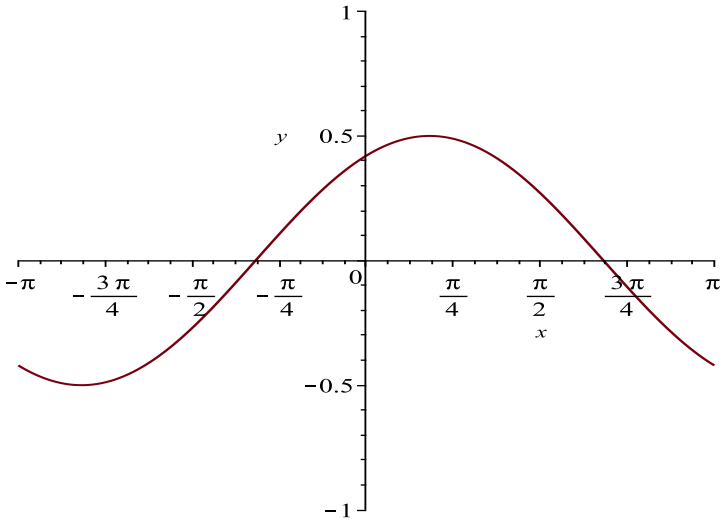
Solution of the wave equation with speed $c^2 = 1$, $u(x,0) = \sin(x)$, $u_t(x,0) = 0$

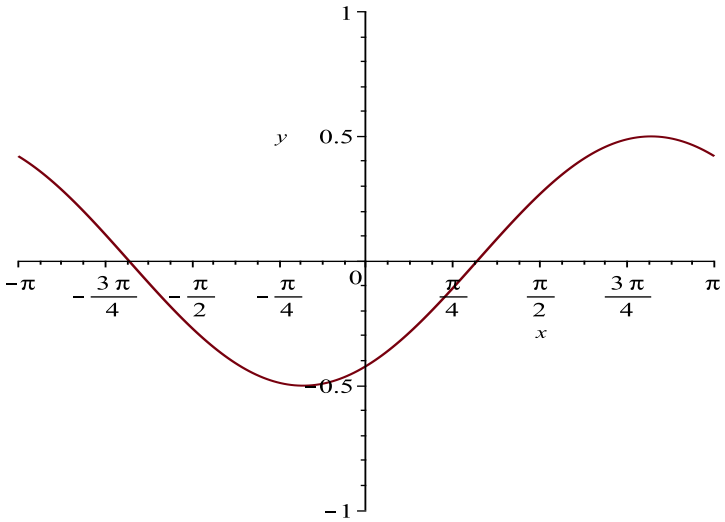
plot $(1/2 \sin(x), x = -\pi \ldots \pi, y = -1 \ldots 1)$



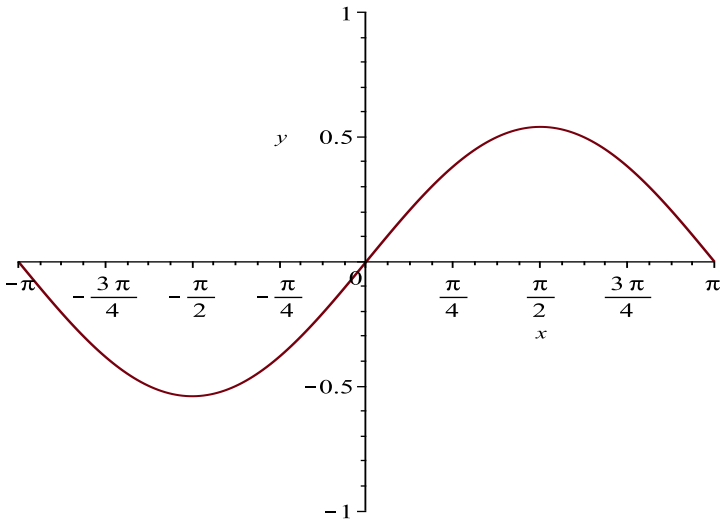
plot $(1/2 \sin(x+1), x = -\pi \ldots \pi, y = -1 \ldots 1)$



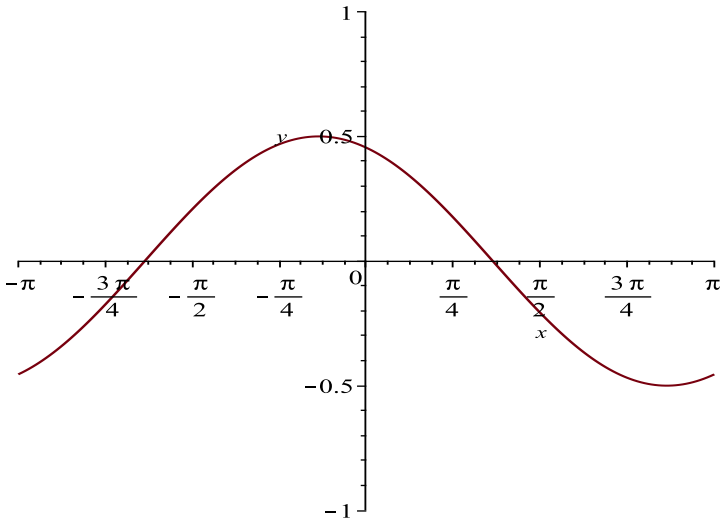
plot $(1/2 \sin(x-1), x = -\pi \ldots \pi, y = -1 \ldots 1)$



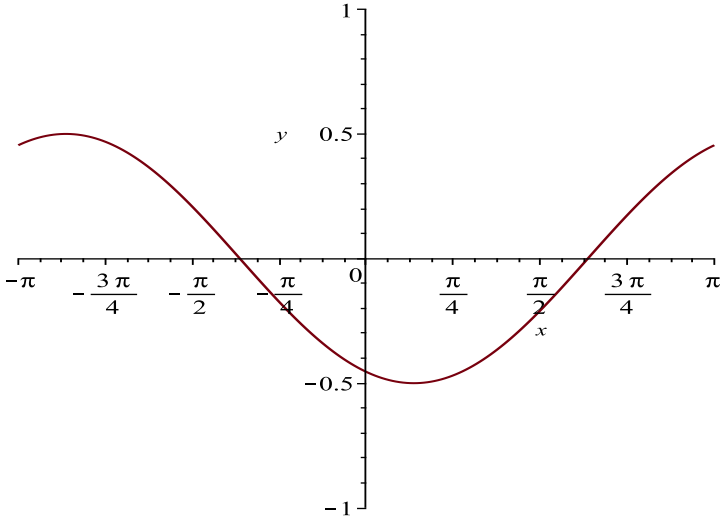
$plot\left(1/2\sin\left(x-1\right)+1/2\sin\left(x+1\right),x=-\pi\ldots\pi,y=-1\ldots1\right)$



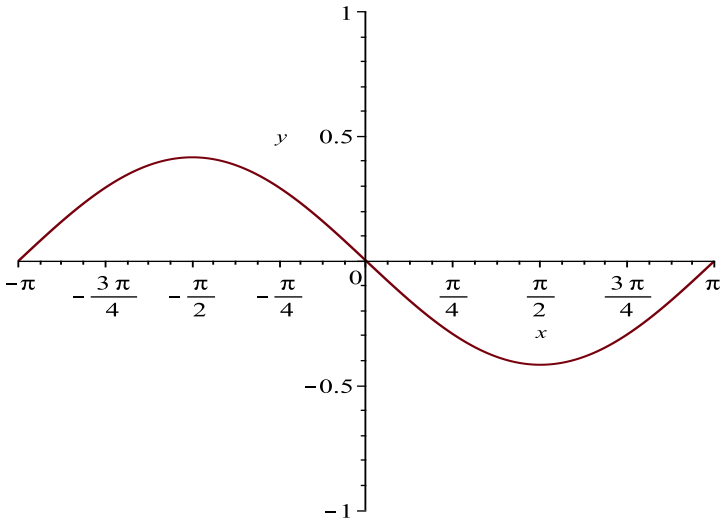
$plot\left(1/2\sin\left(x+2\right),x=-\pi\ldots\pi,y=-1\ldots1\right)$



plot $(1/2 \sin(x-2), x = -\pi \ldots \pi, y = -1 \ldots 1)$



plot $(1/2 \sin(x-2) + 1/2 \sin(x+2), x = -\pi \ldots \pi, y = -1 \ldots 1)$


1
y
0.5
−π
−3 π/4
−π/2
−π/4
0
π/4
π/2
3 π/4
π
x
−0.5
−1