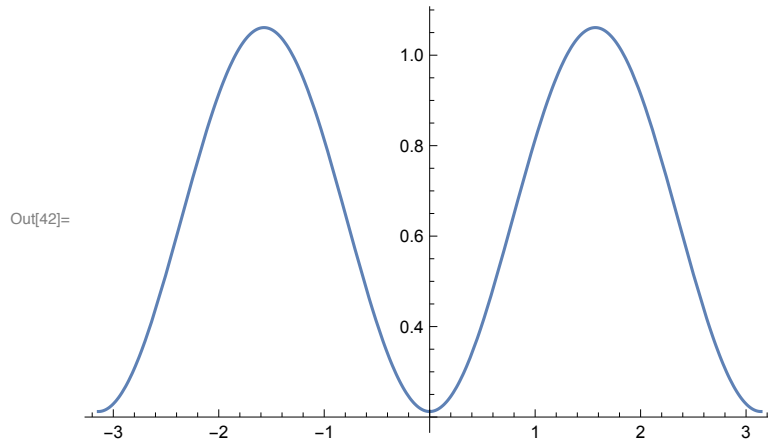


In[41]:= **FourierCosSeries**[Sin[x], x, 2]

Out[41]=
$$\frac{2}{\pi} - \frac{4 \cos[2x]}{3\pi}$$

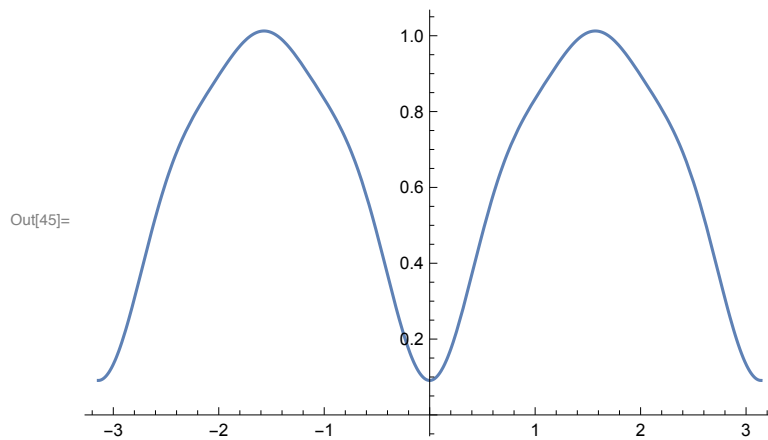
In[42]:= **Plot**[% , {x, -π, π}]



In[44]:= **FourierCosSeries**[Sin[x], x, 6]

Out[44]=
$$\frac{2}{\pi} - \frac{4 \cos[2x]}{3\pi} - \frac{4 \cos[4x]}{15\pi} - \frac{4 \cos[6x]}{35\pi}$$

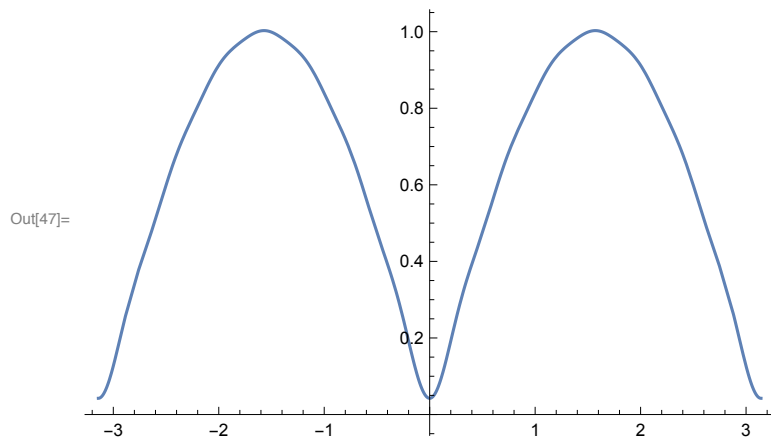
In[45]:= **Plot**[% , {x, -π, π}]



In[46]:= **FourierCosSeries**[Sin[x], x, 15]

Out[46]=
$$\frac{2}{\pi} - \frac{4 \cos[2x]}{3\pi} - \frac{4 \cos[4x]}{15\pi} - \frac{4 \cos[6x]}{35\pi} - \frac{4 \cos[8x]}{63\pi} - \frac{4 \cos[10x]}{99\pi} - \frac{4 \cos[12x]}{143\pi} - \frac{4 \cos[14x]}{195\pi}$$

In[47]:= **Plot**[% , {x, - π , π }]



In[48]:= **FourierCosSeries**[Sin[x], x, 50]

Out[48]=

$$\begin{aligned} & \frac{2}{\pi} - \frac{4 \cos[2x]}{4 \cos[12x]} - \frac{4 \cos[4x]}{4 \cos[14x]} - \frac{4 \cos[6x]}{4 \cos[16x]} - \frac{4 \cos[8x]}{4 \cos[18x]} - \frac{4 \cos[10x]}{4 \cos[20x]} - \\ & \frac{143 \pi}{4 \cos[22x]} - \frac{195 \pi}{4 \cos[24x]} - \frac{255 \pi}{4 \cos[26x]} - \frac{323 \pi}{4 \cos[28x]} - \frac{399 \pi}{4 \cos[30x]} - \\ & \frac{483 \pi}{4 \cos[32x]} - \frac{575 \pi}{4 \cos[34x]} - \frac{675 \pi}{4 \cos[36x]} - \frac{783 \pi}{4 \cos[38x]} - \frac{899 \pi}{4 \cos[40x]} - \\ & \frac{1023 \pi}{4 \cos[42x]} - \frac{1155 \pi}{4 \cos[44x]} - \frac{1295 \pi}{4 \cos[46x]} - \frac{1443 \pi}{4 \cos[48x]} - \frac{1599 \pi}{4 \cos[50x]} - \\ & \frac{1763 \pi}{1935 \pi} - \frac{2115 \pi}{2303 \pi} - \frac{2499 \pi}{2499 \pi} \end{aligned}$$

In[49]:= **Plot**[% , {x, - π , π }]

