

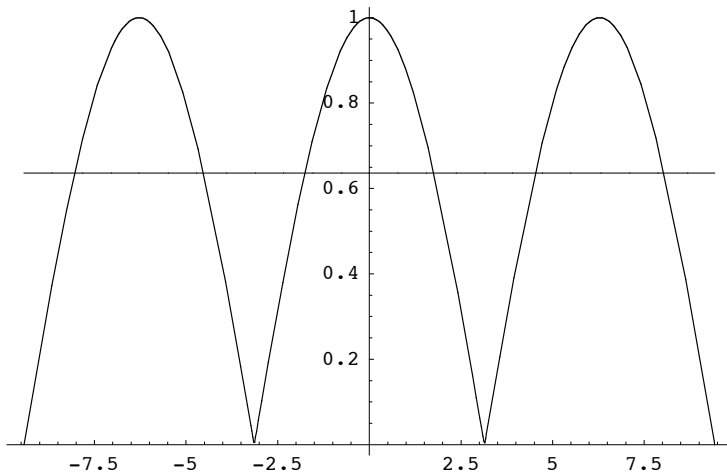
```
Integrate[Cos[t/2] Cos[n*t], {t, -Pi, Pi}]
```

$$\text{Out}[7]= \frac{4 \cos[n \pi]}{1 - 4 n^2}$$

```
In[26]:= Fp[t_] = (2/Pi) + Sum[(-1)^n * Pi^(-1) * ((1/4) - n^2)^(-1) * Cos[n*t], {n, 1, 0}]
```

```
Plot[{Abs[Cos[t/2]], Fp[t]}, {t, -3 Pi, 3 Pi}]
```

$$\text{Out}[26]= \frac{2}{\pi}$$

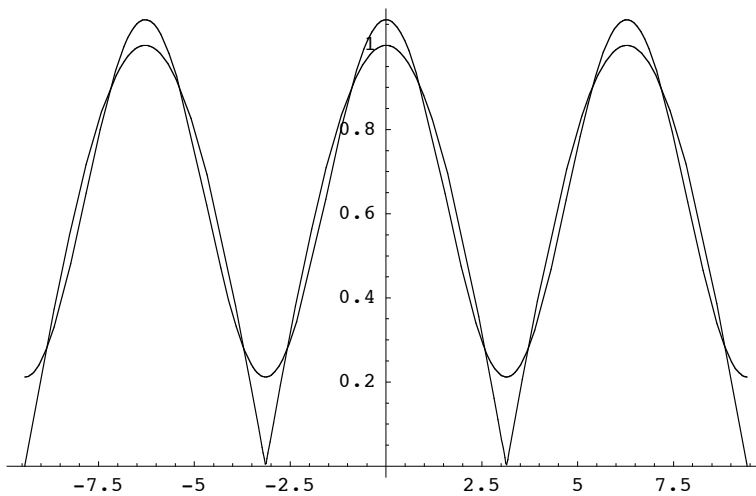


```
Out[27]= - Graphics -
```

```
In[28]:= Fp[t_] = (2/Pi) + Sum[(-1)^n * Pi^(-1) * ((1/4) - n^2)^(-1) * Cos[n*t], {n, 1, 1}]
```

```
Plot[{Abs[Cos[t/2]], Fp[t]}, {t, -3 Pi, 3 Pi}]
```

$$\text{Out}[28]= \frac{2}{\pi} + \frac{4 \cos[t]}{3 \pi}$$

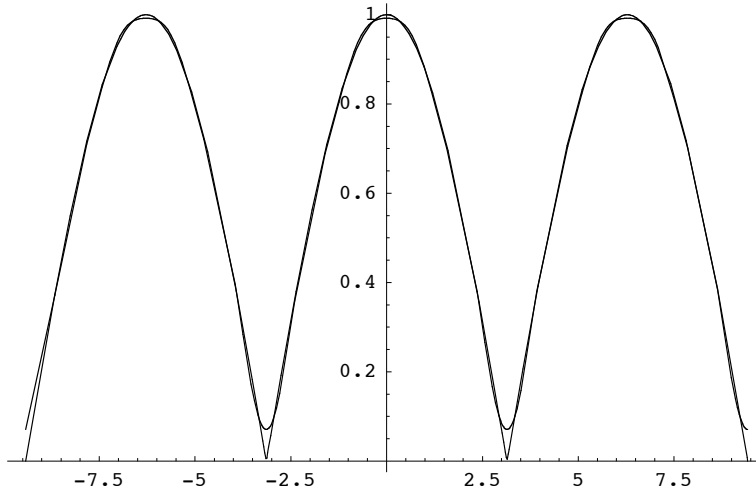


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Out[29]= - Graphics -
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```
In[40]:= Fp[t_] = (2 / Pi) + Sum[(-1)^n * Pi^(-1) * ((1 / 4) - n^2)^(-1) * Cos[n * t], {n, 1, 4}]
```

```
Plot[{Abs[Cos[t / 2]], Fp[t]}, {t, -3 Pi, 3 Pi}]
```

```
Out[40]=  $\frac{2}{\pi} + \frac{4 \cos[t]}{3\pi} - \frac{4 \cos[2t]}{15\pi} + \frac{4 \cos[3t]}{35\pi} - \frac{4 \cos[4t]}{63\pi}$ 
```

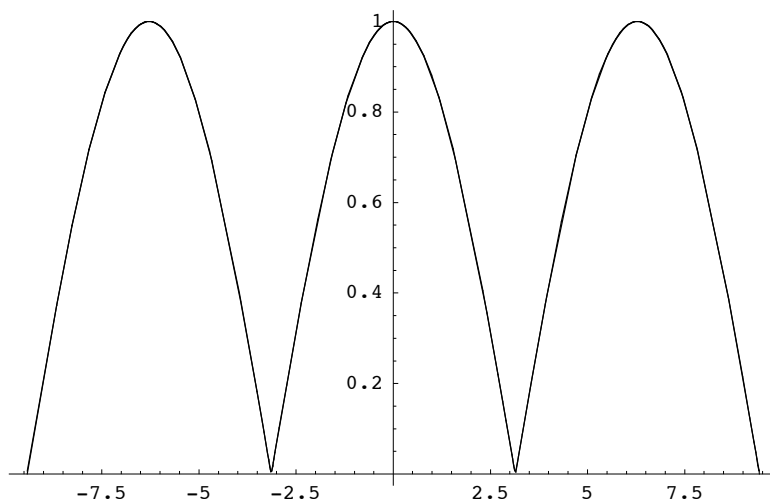


```
Out[41]= - Graphics -
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```
In[38]:= Fp[t_] = (2 / Pi) + Sum[(-1)^n * Pi^(-1) * ((1/4) - n^2)^(-1) * Cos[n * t], {n, 1, 49}]
```

```
Plot[{Abs[Cos[t / 2]], Fp[t]}, {t, -3 Pi, 3 Pi}]
```

$$\begin{aligned} \text{Out}[38]= & \frac{2}{\pi} + \frac{4 \cos[t]}{3\pi} - \frac{4 \cos[2t]}{15\pi} + \frac{4 \cos[3t]}{35\pi} - \frac{4 \cos[4t]}{63\pi} + \frac{4 \cos[5t]}{99\pi} - \frac{4 \cos[6t]}{143\pi} + \frac{4 \cos[7t]}{195\pi} - \\ & \frac{4 \cos[8t]}{255\pi} + \frac{4 \cos[9t]}{323\pi} - \frac{4 \cos[10t]}{399\pi} + \frac{4 \cos[11t]}{483\pi} - \frac{4 \cos[12t]}{575\pi} + \frac{4 \cos[13t]}{675\pi} - \\ & \frac{4 \cos[14t]}{783\pi} + \frac{4 \cos[15t]}{899\pi} - \frac{4 \cos[16t]}{1023\pi} + \frac{4 \cos[17t]}{1155\pi} - \frac{4 \cos[18t]}{1295\pi} + \frac{4 \cos[19t]}{1443\pi} - \\ & \frac{4 \cos[20t]}{1599\pi} + \frac{4 \cos[21t]}{1763\pi} - \frac{4 \cos[22t]}{1935\pi} + \frac{4 \cos[23t]}{2115\pi} - \frac{4 \cos[24t]}{2303\pi} + \frac{4 \cos[25t]}{2499\pi} - \\ & \frac{4 \cos[26t]}{2703\pi} + \frac{4 \cos[27t]}{2915\pi} - \frac{4 \cos[28t]}{3135\pi} + \frac{4 \cos[29t]}{3363\pi} - \frac{4 \cos[30t]}{3599\pi} + \frac{4 \cos[31t]}{3843\pi} - \\ & \frac{4 \cos[32t]}{4095\pi} + \frac{4 \cos[33t]}{4355\pi} - \frac{4 \cos[34t]}{4623\pi} + \frac{4 \cos[35t]}{4899\pi} - \frac{4 \cos[36t]}{5183\pi} + \frac{4 \cos[37t]}{5475\pi} - \\ & \frac{4 \cos[38t]}{5775\pi} + \frac{4 \cos[39t]}{6083\pi} - \frac{4 \cos[40t]}{6399\pi} + \frac{4 \cos[41t]}{6723\pi} - \frac{4 \cos[42t]}{7055\pi} + \frac{4 \cos[43t]}{7395\pi} - \\ & \frac{4 \cos[44t]}{7743\pi} + \frac{4 \cos[45t]}{8099\pi} - \frac{4 \cos[46t]}{8463\pi} + \frac{4 \cos[47t]}{8835\pi} - \frac{4 \cos[48t]}{9215\pi} + \frac{4 \cos[49t]}{9603\pi} \end{aligned}$$



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Out[39]= - Graphics -
```