$$\int \sin mx \cos nx \, dx$$

$$\int \cos mx \cos nx \, dx$$

$$\int \sin mx \sin nx \, dx$$

S(sinmx* cosnx)dx=S(½(sin(m+n)x+sin(m-n)x)dx=
=1/2S(sin(m+n)x)dx+1/2S(sin(m-n)x)dx=
1/2S(sin(m+n)x)d(m+n)x/(m+n)+1/2S(sin(m-n)x)d(m-n)x/(m-n)=
=1/2S(sint)dt/(m+n)+1/2S(sinu)du/(m-n)=1/(2(m+n))*(-cost)+
+1/(2(m-n))*(-cosu)=1/(2(m+n))*(-cos(m+n))+1/(2(m-n))*(-cos(m-n))+C
t=(m+n)x
u=(m-n)x

1/2S(sin(m+n)x)d(m+n)x/(m+n)=1/(2(m+n))S(sin(m+n)x)d(m+n)x=
=[(m+n)x=t]=1/(2(m+n))Ssintdt=

Д З

$$\sin mx \cos nx = \frac{1}{2}[\sin(m+n)x + \sin(m-n)x],$$

$$\cos mx \cos nx = \frac{1}{2}[\cos(m+n)x + \cos(m-n)x],$$

$$\sin mx \sin nx = \frac{1}{2}[\cos(m-n)x - \cos(m+n)x].$$