Выразите $\cos^3 \varphi$ через тригонометрические функции кратных углов.

cos^3 x = f(cos3x)

(cosx + isinx)^n = (cosnx + i*sinnx)
(cosx+isinx)^3=cos^3x+i3cos^2x sin x- 3sin^2x cosx -isin^3x=
=cos3x+isin3x
(cos^3x - 3sin^2x cosx) +i(-sin^3x+3cos^2x sinx)
(cos^3x - 3sin^2x cosx) +i(-sin^3x+3cos^2x sinx)=cos3x+isin3x

cos^3x - 3sin^2x cosx=cos3x =>
cos^3x=cos3x+3sin^2(x) cosx=cos3x+3(1-cos^2(x))cosx=
=cos3x+3cosx-3cos^3(x)
4cos^3(x)=cos3x+3cosx
cos^3(x)=(cos3x+3cosx)/4

sin3x=-sin^3x+3cos^2x sinx=-sin^3x+3(1-sin^2)x sinx=-sin^3 x+3sinx-3sin^3 x
4sin^3x=-sin3x+3sinx
sin^3 (x)=(3sinx-sin3x)/4