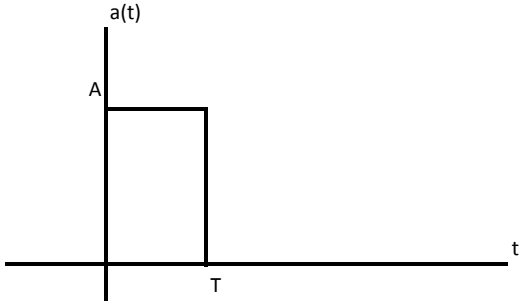
a(t) = A .rect { t/T}



FT { a(t) x c(t) } = A(f) * C(f) * CONVOLUTION

= {A . T sinc (πfT) . $e^{-j\pi fT}$} * {$e^{j\phi}/2$ + $e^{-j\phi}/2$}

phasors only exist at + / - Fc

answer is A(f) centred around + / - Fc

A(f) = A . T sinc (πfT) . $e^{-j\pi fT}$ this spectrum is centred about zero.

Not sure what the resulting phase angle is ?
The phasors have phase angles + / - ϕ.
A(f) has a minus phase angle of πfT.

complex number meaning the sinc function lies at a minus angle to the REAL axis.

The size of the minus angle is dependent on the width of the rectangular pulse.