

FRIDAY QUIZ I

GIVEN THAT $m(t) \rightleftharpoons M(f)$

FIND THE INVERSE FOURIER TRANSFORM OF

$$\frac{1}{2j} [M(f-f_0) - M(f+f_0)]$$

SOLUTION:

FREQ. SCALING PROPERTY:

$$m(t) \cdot e^{j2\pi f_0 t} \rightleftharpoons M(f-f_0)$$

$$m(t) \cdot e^{-j2\pi f_0 t} \rightleftharpoons M(f+f_0)$$

$$\frac{1}{2j} [M(f-f_0) - M(f+f_0)] \rightleftharpoons \frac{1}{2j} m(t) \cdot [e^{j2\pi f_0 t} - e^{-j2\pi f_0 t}]$$

$$\rightleftharpoons m(t) \cdot \sin(2\pi f_0 t)$$