

Fourier Pairs for Test 9 F06

$$4 \operatorname{tri}(3t + 1) = 4 \operatorname{tri}(3(t + 1/3)) \xleftrightarrow{F} (4/3) \operatorname{sinc}^2(f/3) e^{j2\pi f/3}$$

$$4 \operatorname{tri}(t/3 + 1) = 4 \operatorname{tri}((t + 3)/3) \xleftrightarrow{F} 12 \operatorname{sinc}^2(3f) e^{j6\pi f}$$

$$4 \operatorname{tri}(3(t + 1)) \xleftrightarrow{F} (4/3) \operatorname{sinc}^2(f/3) e^{j2\pi f}$$

$$4 \operatorname{tri}((t + 1)/3) \xleftrightarrow{F} 12 \operatorname{sinc}^2(3f) e^{j2\pi f}$$

$$4e^{-3(t-1)} u(t-1) \xleftrightarrow{F} \frac{4e^{-j\omega}}{j\omega + 3}$$

$$4e^{-3(2t-1)} u(2t-1) = 4e^{-3(2(t-1/2))} u(2(t-1/2)) \xleftrightarrow{F} \frac{1}{2} \frac{4e^{-j\omega/2}}{j\omega/2 + 3} = \frac{4e^{-j\omega/2}}{j\omega + 6}$$

$$4e^{-6(t-1)} u(2(t-1)) \xleftrightarrow{F} \frac{1}{2} \frac{4e^{-j\omega}}{j\omega/2 + 3} = \frac{4e^{-j\omega}}{j\omega + 6}$$

$$4e^{-3(t/2-1)} u(t/2-1) = 4e^{-3(t-2)/2} u((t-2)/2) \xleftrightarrow{F} 2 \frac{4e^{-j2\omega}}{j2\omega + 3} = \frac{4e^{-j2\omega}}{j\omega + 3/2}$$

$$4 \cos(2t + (\pi/3)) = 4 \cos(2(t + \pi/6)) \xleftrightarrow{F} 2[\delta(f - 1/\pi) + \delta(f + 1/\pi)] e^{j\pi^2 f/3}$$

$$4 \cos(4(t + \pi/3)) \xleftrightarrow{F} 2[\delta(f - 2/\pi) + \delta(f + 2/\pi)] e^{j2\pi^2 f/3}$$

$$4 \cos((t + \pi/3)/4) \xleftrightarrow{F} 2[\delta(f - 1/8\pi) + \delta(f + 1/8\pi)] e^{j2\pi^2 f/3}$$

$$4 \cos(t/4 + (\pi/3)) = 4 \cos((t + 4\pi/3)/4) \xleftrightarrow{F} 2[\delta(f - 1/8\pi) + \delta(f + 1/8\pi)] e^{j8\pi^2 f/3}$$