3.28 Compute the generalized Fourier transform of the following signals:

(b) $x(t) = 1 + 2e^{-j2\pi t} + 2e^{j2\pi t}, -\infty < t < \infty$

b) Per Table 3.2

$$1 \quad -\infty < t < \infty \quad \longleftrightarrow \quad 2\pi\,\delta(\omega)$$

$$e^{j\omega_0 t} \quad \longleftrightarrow \quad 2\pi\,\delta(\omega-\omega_0)$$

and using linearity property $a\,x(t) \leftrightarrow a\,X(\omega)$

$$X(\omega) = 2\pi\,\delta(\omega) + 4\pi\,\delta(\omega+2\pi) + 4\pi\,\delta(\omega-2\pi)$$