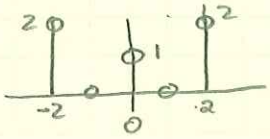
1. Use the definition of the DTFT to find the DTFT of  if the sequence is zero elsewhere.

1. $x[n] = 2\delta[n+2] + \delta[n] + 2\delta[n-2]$

$$X(e^{j\omega}) = \sum_{n=-\infty}^{\infty} x[n]\, e^{-j\omega n}$$

$$= 2e^{+j\omega 2} + 1 + 2e^{-j\omega 2}$$

$$= 2(e^{j\omega 2} + e^{-j\omega 2}) + 1 \quad \text{but Euler says } \frac{e^{j\theta} + e^{-j\theta}}{2} = \cos\theta$$

$$= 2 \cdot 2\left(\frac{e^{j\omega 2} + e^{-j\omega 2}}{2}\right) + 1$$

$$= \boxed{4\cos(2\omega) + 1}$$