Chapter 7, Solution 31.

(a) $\int_{-\infty}^{\infty}\left[e^{-4t^2}\,\delta(t-2)\right]dt = e^{-4t^2}\Big|_{t=2} = e^{-16} = \mathbf{112\times10^{-9}}$

(b) $\int_{-\infty}^{\infty}\left[5\delta(t) + e^{-t}\,\delta(t) + \cos 2\pi t\,\delta(t)\right]dt = \left(5 + e^{-t} + \cos(2\pi t)\right)\Big|_{t=0} = 5+1+1 = 7$