

Problem 1) $f(x) = \text{Rect}(x/4) + \text{Tri}(x) \rightarrow F(s) = 4 \text{sinc}(4s) + \text{sinc}^2(s).$

$$g(x) = \text{Rect}(x/2) - 2\text{Tri}(x) \rightarrow G(s) = 2 \text{sinc}(2s) - 2 \text{sinc}^2(s).$$

In the above derivations, we have used the scaling property of Fourier transformation, as well as the fact that the Fourier transform of $\text{Rect}(x)$ is $\text{sinc}(s)$, while that of $\text{Tri}(x)$ is $\text{sinc}^2(s)$.
