

Identity

LTIS ✓

$$X(n) \rightarrow \boxed{I} \rightarrow Y(n) = X(n)$$

$$\begin{array}{l} 2x \downarrow \\ 0 \ 1 \ 3 \ -1 \rightarrow \boxed{I} \rightarrow 0 \ 1 \ 3 \ -1 \\ 0 \ 2 \ 6 \ -2 \rightarrow \boxed{I} \rightarrow 0 \ 2 \ 6 \ -2 \end{array} \quad \downarrow 2x$$

$$1 \ 3 \ -1 \ 0 \rightarrow \quad \rightarrow 1 \ 3 \ -1 \ 0$$

Doubling

LTIS ✓

$$X(n) \rightarrow \boxed{D} \rightarrow Y(n) = 2X(n)$$

$$\begin{array}{l} 2x \downarrow \\ 0 \ 1 \ 3 \ -1 \rightarrow \boxed{D} \rightarrow 0 \ 2 \ 6 \ -2 \\ 0 \ 2 \ 6 \ -2 \rightarrow \boxed{D} \rightarrow 0 \ 4 \ 12 \ -4 \end{array} \quad \downarrow 2x$$

$$20 \ 20 \rightarrow \boxed{D} \rightarrow 40 \ 40$$

$$2 \ 2 \ 8 \ -2 \rightarrow \boxed{D} \rightarrow 4 \ 4 \ 16 \ -4$$